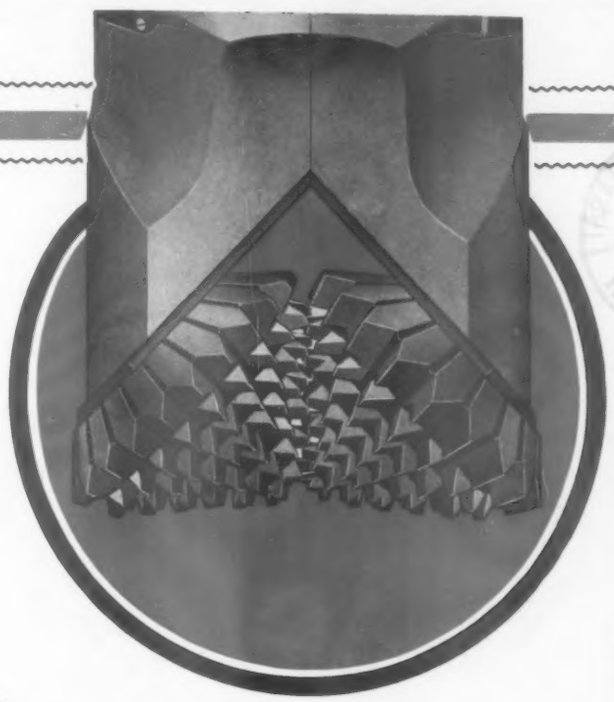
10¢ A COPY

The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas

May 11, 1928 Volume 49. No. 8



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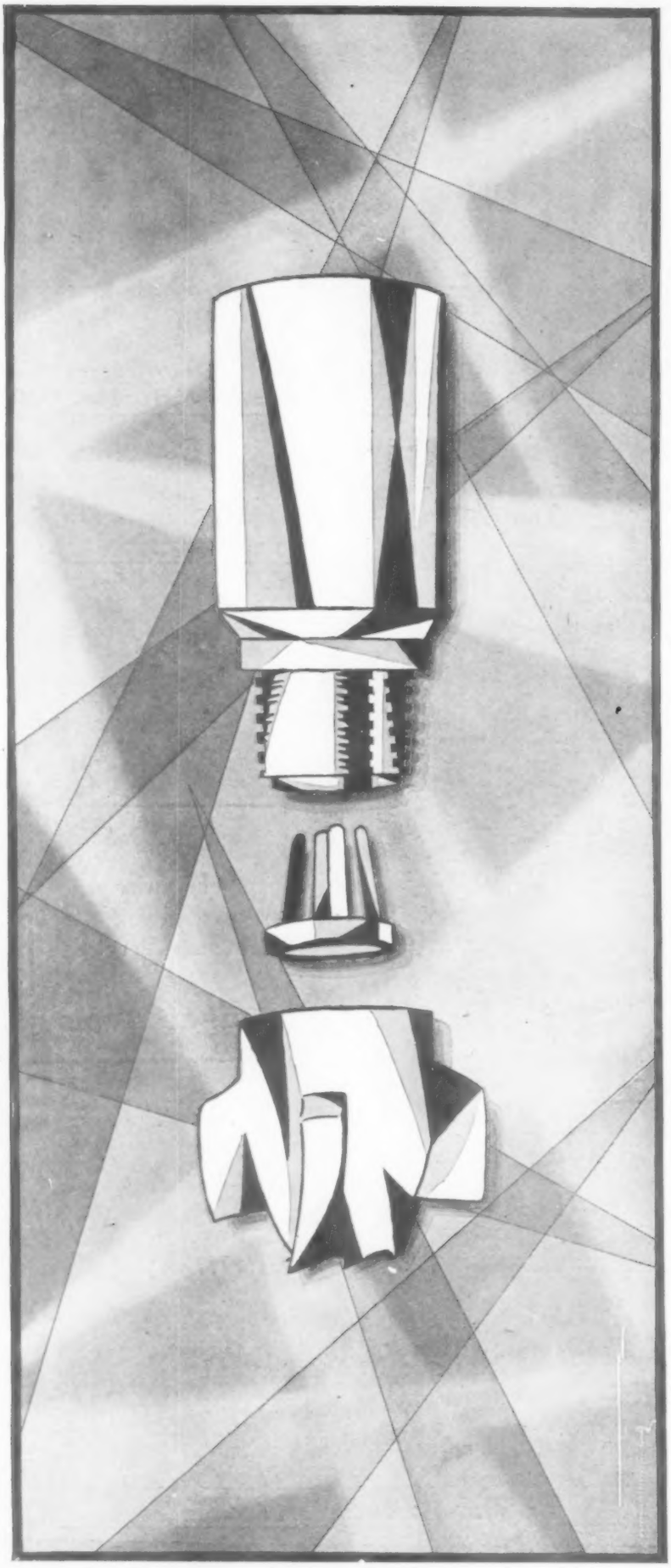

¶Almost anybody can make a core drill that looks like an Elliott. Lots of people have tried, but they can't imitate Elliott performance. ¶Don't be deceived by "me-too" core drills. ¶Have you the Elliott catalog?

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GASO PUMPS
for every oil industry need

Say you saw it in The OIL WEEKLY

Now Comes the *Roller Bearing Bessemer Engine!*

A NEW and Finer Oil Field Engine! A Four-Cycle power plant of the utmost simplicity. A brute for abuse—built with such strength that they don't know what wear-out means.

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This new Bessemer is another Leader, thru and thru. See it, examine it, watch it perform, then judge for yourself.

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BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

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Showing the application of Carey Asbestos Pipe Line Felt.

Application of asphalt before the felt is applied. Carey Asbestos Pipe Line Felt will not shatter off when the pipe is lowered into place.

ARMOR. Tough, rock-like asbestos armor — strengthened, saturated, impregnated through and through with time-proof asphalt. Safe from corrosion—immune to moisture—impervious to most chemical-laden soils. You can safeguard those pipes for years to come with Carey Asbestos Pipe Line Felt. Write for the facts.

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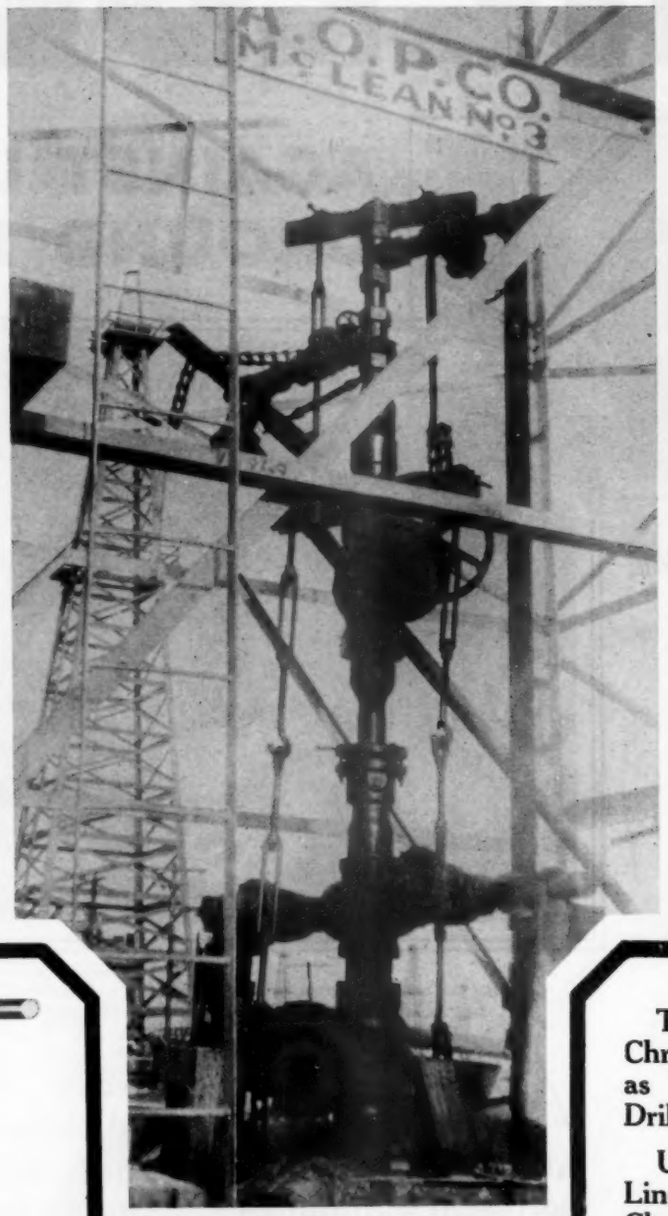

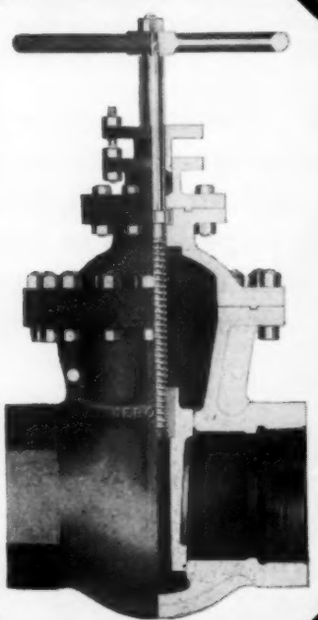

The Valves on the Christmas Tree are just as important as the Drilling Gate.

Use Kerotest Flow Line Valves on the Christmas Tree and play 100% safe.

Kerotest Flow Line Valves made in four types to suit every field condition.

KEROTEST MANUFACTURING CO.
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Manufacturers of Drilling Valves, Refinery Valves, Flow Line Valves and Heavy Duty Fittings for oil fields.

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Say you saw it in The OIL WEEKLY

Hold the WATCH on It!

Check it with tachometer and stop-watch! Goodrich "1788 Highflex" is the ideal belt to reduce slippage and insure uniform speed on every type of machinery in which close speed-regulation is an important factor.

Although built of heavy, hard-woven canvas which enables it to handle the heaviest loads, "1788 Highflex" bends so easily—because of its "free edge" fold-less construction—that better contact and minimum slippage are assured, even on small pulleys.

This greater flexibility—and greatly reduced stretch—minimize shut-downs and burnt-out bearings. It's *the* belt for long life and minimum cost—specify "1788 Highflex" for your most difficult drives, and all your other drives!

Free bending of ply on ply.
No folds in the fabric.
No seams to open up.
No ply separation.
No bootlegging.
Made of strongest belt duck—50% less stretch.
Compact weave of fabric gives better anchorage—fasteners won't pull out.
Not affected by atmospheric changes.
Longer life.
Send for folder of valuable horse-power and pulley data.

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"1788 Highflex" Belt

Four Reliable Products for the Industry

"Built and Backed by LINK-BELT"

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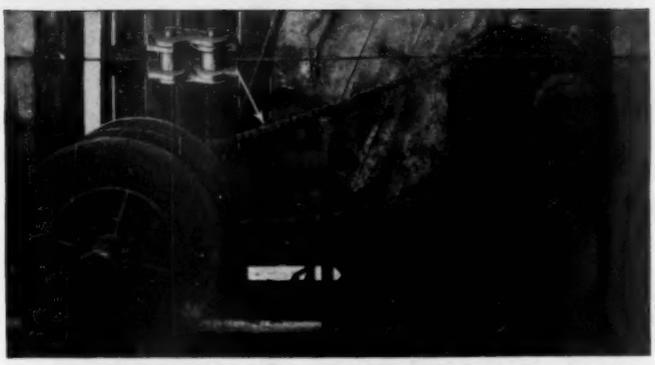
OUR experience in the designing and building of machinery—over a period of fifty years—has entered into the construction of the RUE-NEK Pumping Unit. The multiple crank disc, service davit and counterweight mechanism are some of the new and unusual features incorporated in its design, and Link-Belt Herringbone Gears (Sykes tooth form) are used throughout.

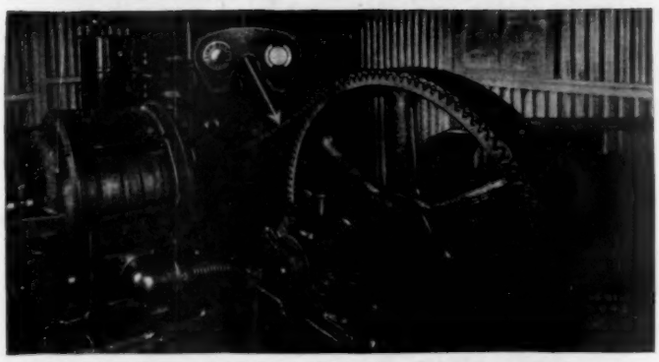
Send for Book No. 780; also list of installations.



Roller Chain

FOR years Link-Belt "RC" Class Roller Chain has demonstrated its durability in all kinds of severe service. It is standard equipment on some of the largest auto trucks, and this service has proved that the chain can stand shocks and strains without impairing its efficiency.

Send for a copy of Link-Belt Roller Chain Data Book No. 257.



Silent Chain

FOR the higher speed drive, as from motor to the first countershaft, the Link-Belt Silent Chain Drive is winning increased recognition.

Link-Belt Silent Chain is Flexible as a Belt—Positive as a Gear—More Efficient Than Either.

It is made in sizes from ¼ to 1000 H. P. and over. Send for a copy of the Link-Belt Silent Chain Drive Data Book No. 125.

Rotary Chain

THE first and most widely known chains in the industry are without doubt the "SS" Class (SS-40 and SS-124) Rotary Drilling Chains, and their corresponding "Plus" Chains (SS-40+ and SS-124+). These Chains have brought a high degree of efficiency to the rotary drilling rig.

This double arrow >——< trade mark identifies Genuine Link-Belt Chains. Carried in stock by stores in every field.

3:91

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LINK-BELT

Say you saw it in The OIL WEEKLY

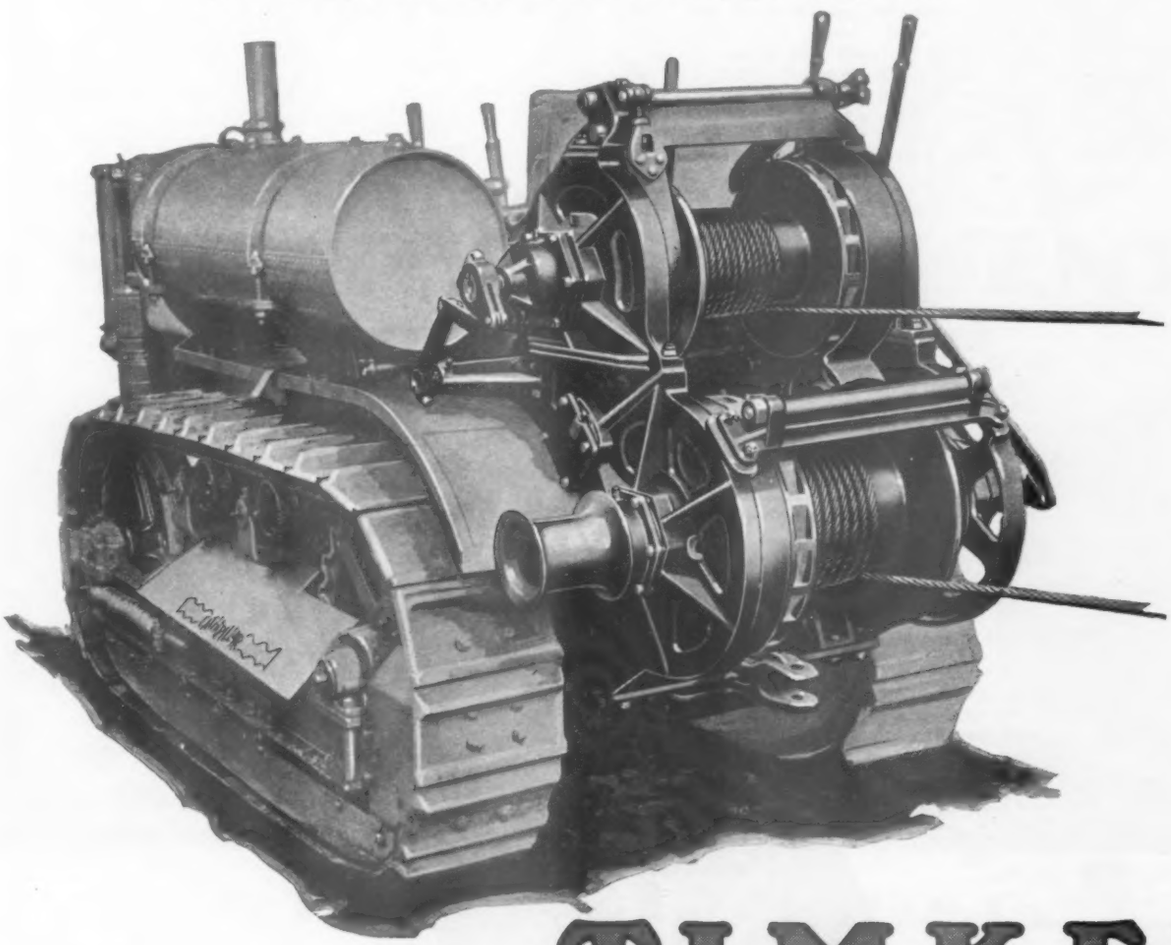
Timken Hoisting Saves

Modern oil field equipment of every type is built around Timken Bearings. Like the "Caterpillar" tractor to which it is applied, the Willamette Tractor Hoist is thoroughly Timken-equipped. In this successful portable hoist Timken Bearings are used on the drive shaft, on the power take-off drive, on the hoist drive shaft, on the upper drum shaft, and on the lower drum shaft.

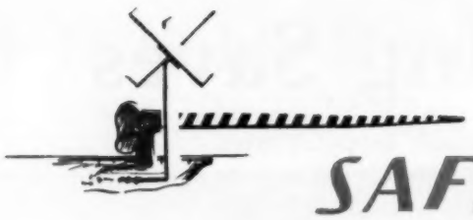
The variety of Timken applications and the versatile service expected of these hoists bring out the full superiority of Timken Bearings. They not only save power and lubricant by overcoming all possible friction, but they resist all the wear of heavy thrust, shock and radial loads. Only Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS*, and Timken electric furnace steel make it possible.

This is the exclusive Timken combination which means permanently protected alignment and the elimination of most repair expense in any machinery. That is why Timken Bearings are more widely used in the oil fields than all other anti-friction makes combined.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO



TIMKEN
Tapered
ROLLER BEARINGS



SAFETY

SPEED

STRENGTH

Every feature necessary for *Safety, Speed, Strength* and *Convenience* is found in Wilson Casing Tongs, because Wilson invented and patented them. You may find imitators but there is only *ONE* original! Here, briefly, are a few of the patented Wilson features—each absolutely necessary for these four cardinal advantages:

1st, Spring-Latch (set in front, at end of jaws).

2nd, 2-step lug (tongs different diameters without adjustment;; eliminates 50% of needed tong sizes).

3rd, Quick detachable bushings (permit use of one tong for many smaller sizes).

4th, Double compensating fulcrum (gives equalized leverage).

5th, Four jaws (permitting perfect fit to casing or pipe).

6th, Rollover lever, (permitting reversal within 10 seconds).

Wilson Tongs are the most economical, due to their low initial cost and low upkeep!

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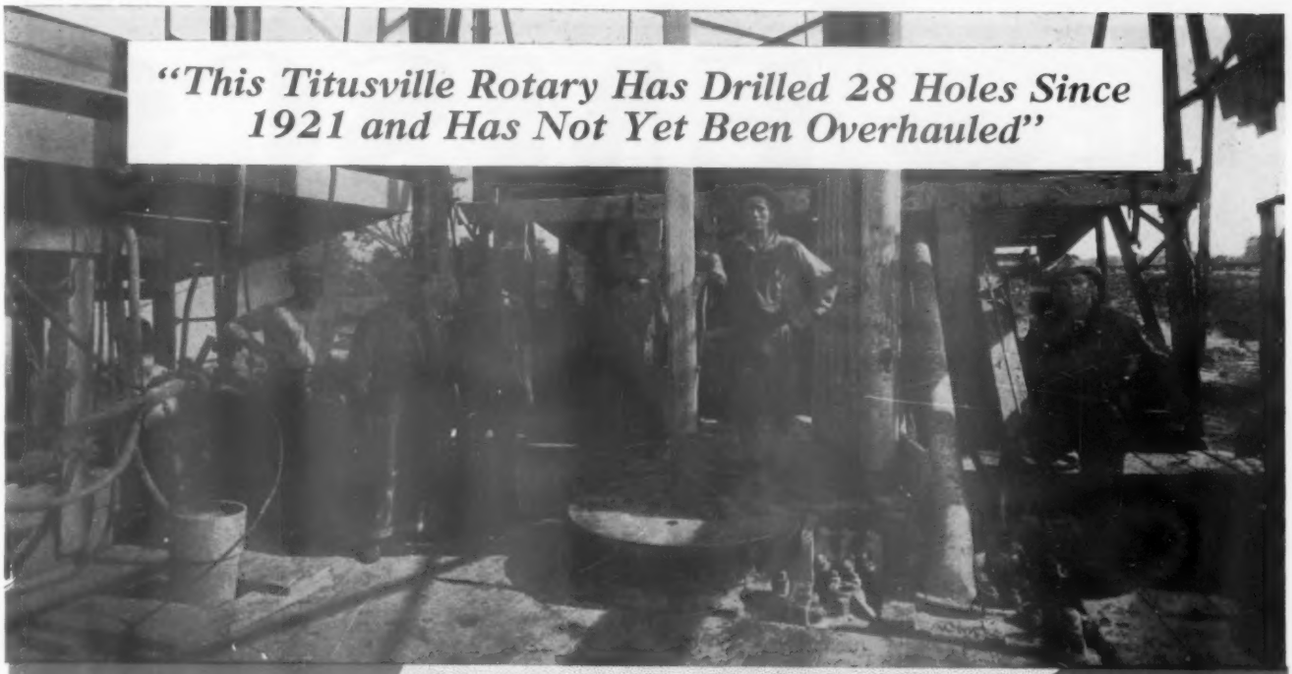
"This Titusville Rotary Has Drilled 28 Holes Since 1921 and Has Not Yet Been Overhauled"



TITUSVILLE ROTARY EQUIPMENT

Just think of it boys, an average of four holes per year for the past seven years and still going strong with the same original bearings.

That's what Harry J. Fast, drilling contractor and his crew are getting from their Titusville Acme Rotary Outfit at Seminole, Oklahoma.

We are as proud of this consistent Acme Rotary performance as the contractor is of his good judgment in specifying this complete Acme rig including turntable, draw works, engine, pumps and boilers shown above.

You, too, can expect the same results, if you specify the time-tested dependability of Tico Acme Rotary Equipment. Your Continental Man will be glad to show you why.

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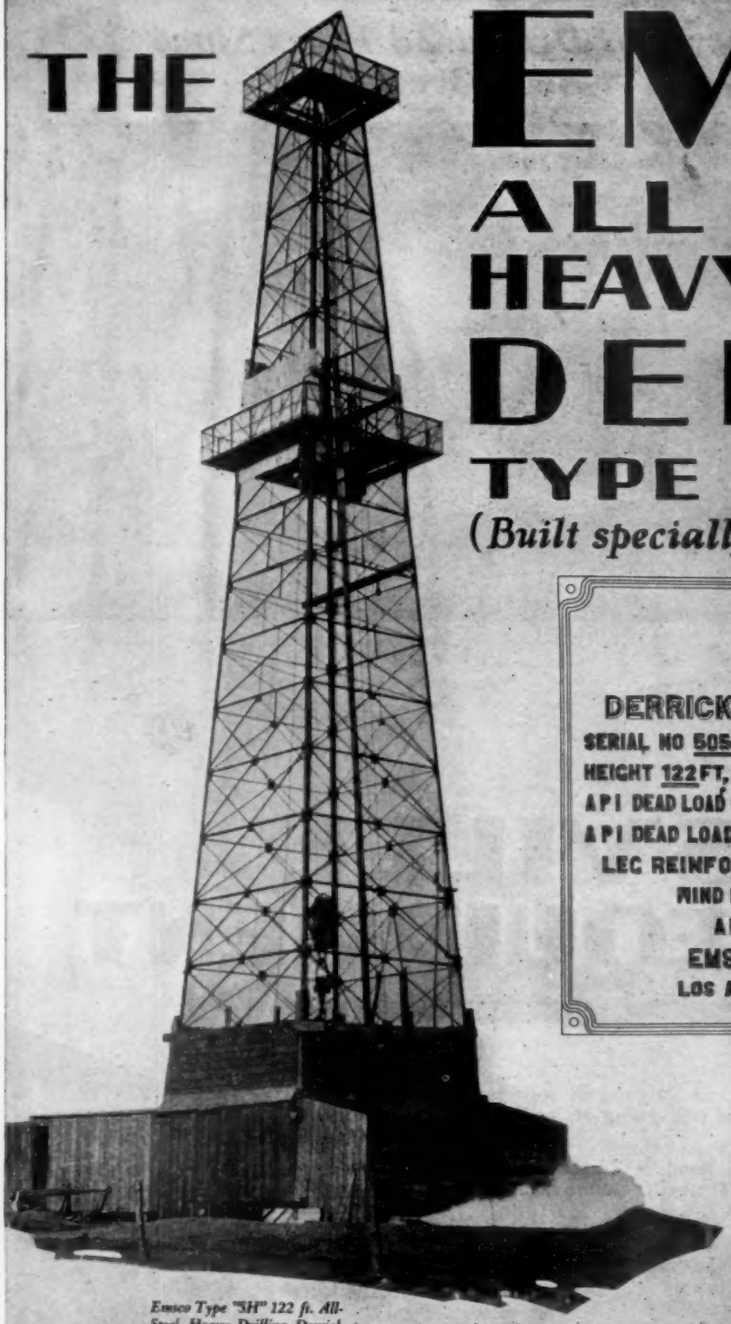
TYPE "SH"-122 FT.

(Built specially for Mid-Continent Drilling)



Emsco Type "SH" 122 ft. All-Steel Heavy Drilling Derrick at Lovell, Oklahoma

EMSCO

DERRICK SPECIFICATIONS JAN. 1928

SERIAL NO 5056 SIZE NO 1 TYPE SH WEIGHT 40540 LBS
HEIGHT 122 FT, BASE SQUARE 24 FT, WATER TABLE OPENING 5-6
API DEAD LOAD CAPACITY WITHOUT LEC REINFORCING 323800 LBS
API DEAD LOAD CAPACITY WITH LEC REINFORCING 827800 LBS
LEC REINFORCING, TUBULAR, SIZE 6"-29 LB DRILL PIPE
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API GIN POLE CAPACITY 6500 LBS

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[2] Seven-foot main leg angles facilitate easy handling and erection.

[3] Leg sections anchored to foundation independent of base beams.

[4] Provision made for independent bolting of base beams to leg anchor clip. Base beams can be installed or removed without affecting leg anchor bolts.

[5] A.P.I. standard derrick dimensions maintained throughout.

Complete specifications and details of construction furnished on request.

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Fully protected by Regan patents and manufactured by us only.

Simplest—only two parts, bail and body.

Safest—can't drop string.

Speediest in operation.

Strongest in design.

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ROD BREAKING
ROD UNSCREWING

REDUCE

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FISHING EXPENSE
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The Pumping Equipment you will eventually use

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Thousands and Thousands of lines used in the Oil Fields have made

WILLIAMSPORT

The Preferred LINES Among Careful Drillers.

May we show you why this line is preferred by so many good drillers?

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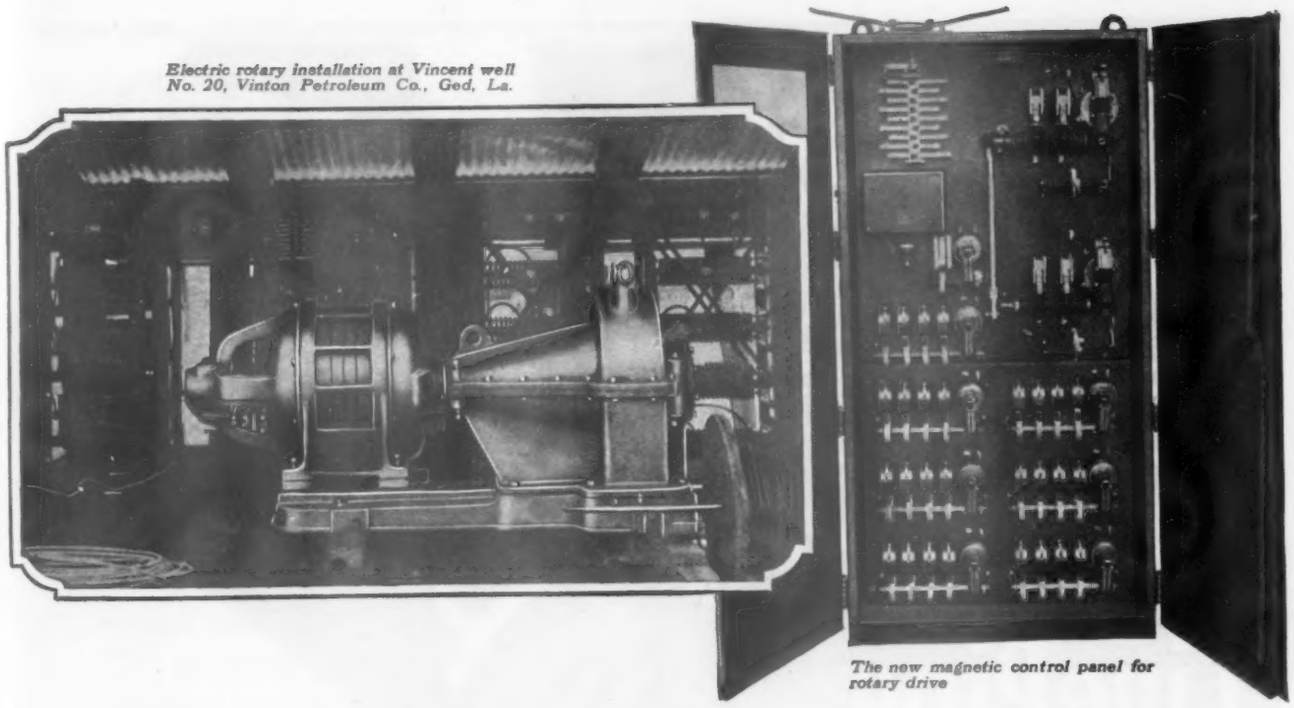

Electric rotary installation at Vincent well No. 20, Vinton Petroleum Co., Ged, La.

The new magnetic control panel for rotary drive

Drill your well faster

with modern electric rotary drive

By replacing steam with electricity in your rotary drilling rigs, you can expect savings, in power alone, as high as 82 per cent. But even more important—you can drill a well in less time.

The latest refinement in G-E Motorized Power for rotary drilling is a new magnetic contactor panel which in one unit performs the functions of circuit breaker, reversing panel, and manual drum switch. Its high capacity for handling heavy loads means greatly prolonged life of contacts. It will operate for long periods with little or no attention, reducing maintenance costs and speeding up the drilling of your well.

When delays in drilling mean dollars per minute and irretrievably lost production, the value of modern, trouble-free G-E motors and control for your drilling equipment is immeasurable.

General Electric supplies complete electric equipment to the oil industry. With warehouse facilities close to your operations, G.E. readily furnishes motors, controllers, transformers, arresters and other protective devices, capacitors for power-factor improvement, switching equipment, etc.

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Apply the proper G-E motor and the correct G-E controller to a specific task, following the recommendations of G-E specialists in electric drive, and you have G-E Motorized Power.

Motorized Power
—fitted to every need

200-136H

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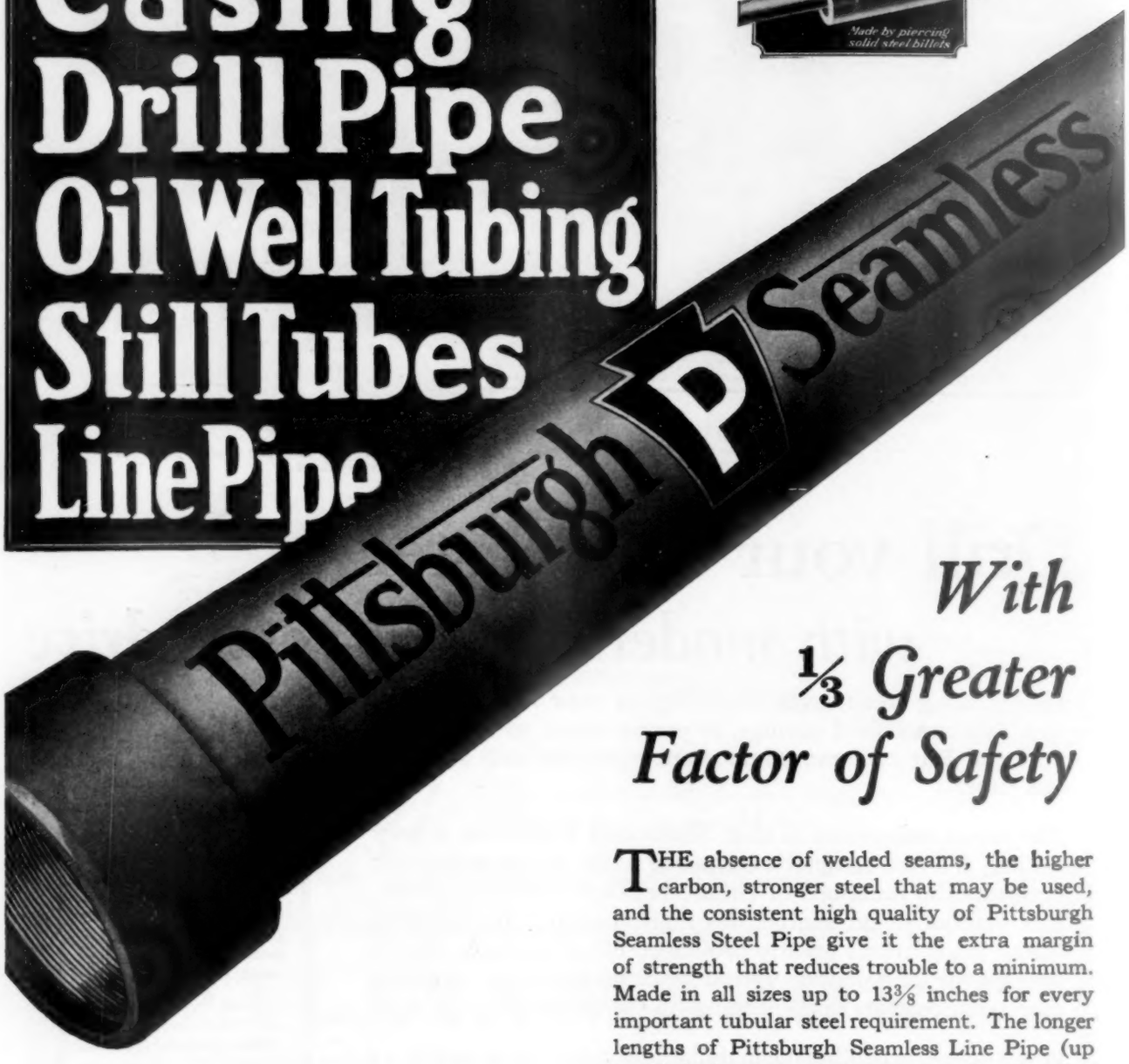

With 1/3 Greater Factor of Safety

THE absence of welded seams, the higher carbon, stronger steel that may be used, and the consistent high quality of Pittsburgh Seamless Steel Pipe give it the extra margin of strength that reduces trouble to a minimum. Made in all sizes up to 13⅜ inches for every important tubular steel requirement. The longer lengths of Pittsburgh Seamless Line Pipe (up to 45 feet) are a great economy in pipe line construction. Full information upon request.

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For Every Service

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When conditions make it necessary, our engineering department works with the operator to fit the exacting demands of his problem. This service, in which our fully equipped mechanical and engineering laboratories are at the disposal of our customers, adapts meters to fit the requirements of the job, and has enabled many companies to eliminate all troubles arising from faulty meters.

Tropic Oil Meters

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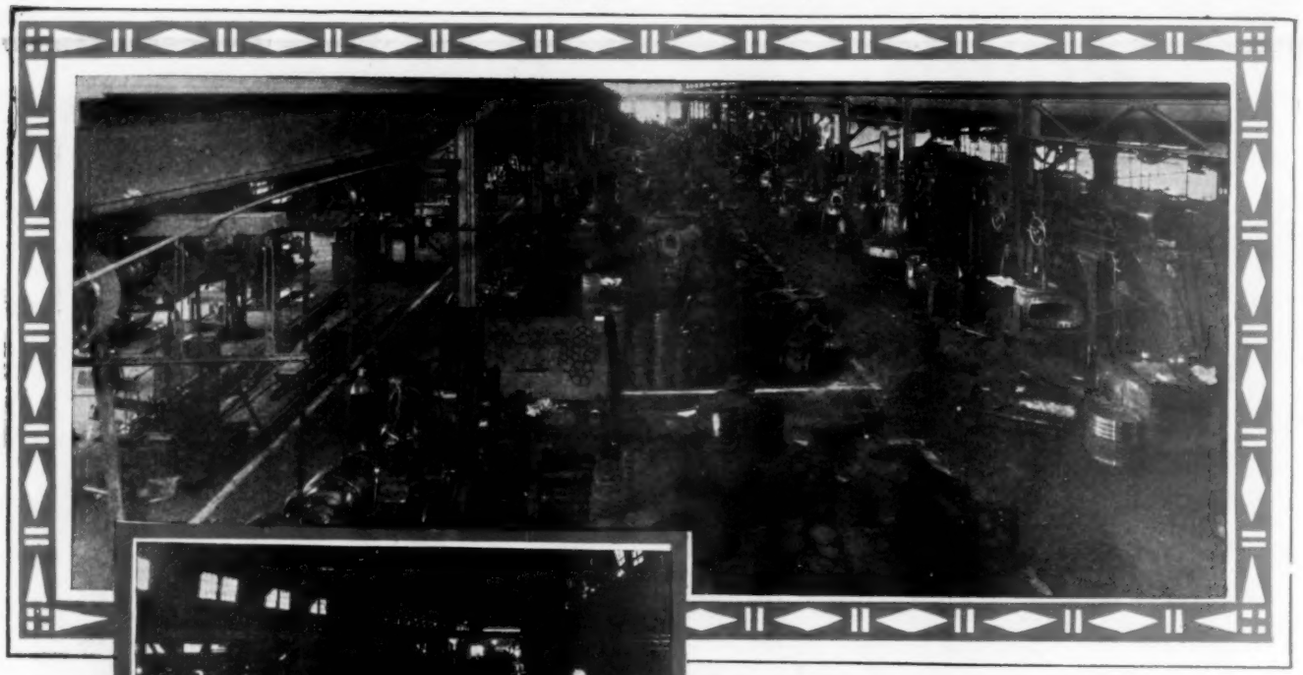

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of the Westcott Valve Company, East St. Louis, Ill.

The thoroughly modern factory and foundry of the Westcott Valve Company are equipped with every modern appliance for the efficient manufacture of high-pressure Oil and Gas Industry valves.

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Valves for natural gas companies, artificial gas companies, refineries, water works, and every commercial purpose on display at the Dallas Convention.

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May 11, 1928 Vol. 49, No. 8

The OIL WEEKLY

Edited Weekly at Houston, Texas SPENCER W. ROBINSON, *Editor*

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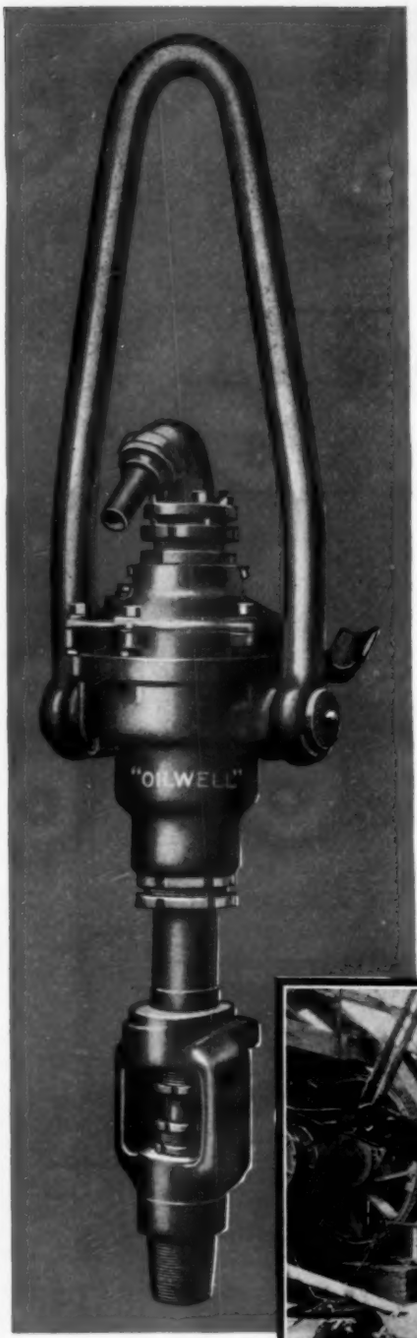

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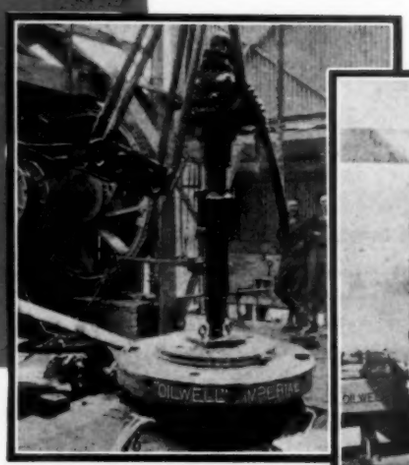

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Say you saw it in The OIL WEEKLY

Markets Stronger Despite Big Gain In Production

Enforcement of proration rules in Hendrick pool and new area south of Little River having immediate effect; gasoline favorable

By KENT RIDLEY

THE two best controlled fields of the country were responsible for added floods of oil which sent production to the highest point of the year last week. Otherwise such a decided rise might have a depressing effect upon the market. But the fact that Hendrick operators were trying their wells so as to see what they are losing by the commission's order limiting output there to 150,000 barrels daily, and Little River operators flowed their new wells only long enough to test, makes this rise only temporary.

West Texas operators are complying with the proration rule which will result in a drop of 150,000 barrels being recorded there for the next report, and late reports from Seminole gave Greater Seminole 274,225 barrels Tuesday, a drop of 3780 barrels from Monday and a loss of 11,108 barrels in three days. Continuation of this loss will offset the gain there in the current report, indicating that production losses this week will more than offset the gain recorded for the period ending May 5.

Shutting off the surplus supply from the Hendrick pool is already being felt in the market, and a better feeling is apparent in gasoline and other refined products.

Gain Strength

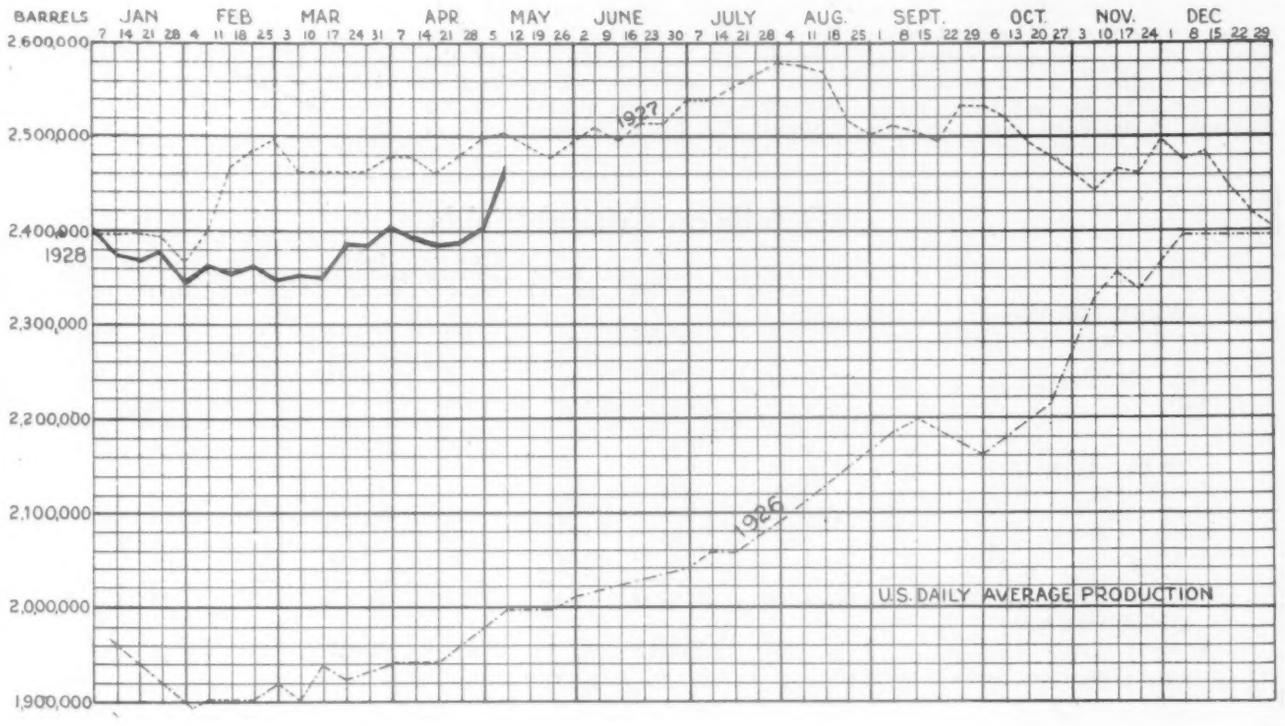
Refined markets in the Mid-Continent continue to gain strength and with the opening of this week revealed a better situation generally than has been seen throughout the territory during the past nine months. A sharp increase in consumption late in April and the first week in May has resulted in the bulk of cheap stuff being wiped out. Big export orders coming simultaneously with territorial sales showing a strong demand has served to greatly cut stocks, and the present output is being moved as made.

On April 7, U. S. motor gasoline was going steadily at 7⅛ cents, and fast movements of this grade is expected to have considerable influence on the trend of other grades, as 62-64 gravity.

Kerosene took a jump near the close of the past week, and 41-43 water white was being bought by marketers at 5¼ cents regularly. While such a price has been paid during the past 10 days by some buyers, this price was not common until about May 5. It is seen that the bulk of the cheap kerosene is off the market, and that the 5¼ spot is general.

The crude oil situation at the opening of the second week in May reveals that there is a continued increase in the demand for stored crude, and that companies owning these stocks are not going to let it go at present prices. The result thus far has been that premiums are being paid for the choice grades of Mid-Continent sweet oil. There are several points of interest now prevalent in the Mid-Continent that favor a betterment of the price situation. During the last week in April, when Seminole fields reached a new low of 271,000 barrels, there was less than 2000 barrels daily average run to storage. Temporarily, this figure has been increased, due to the comeback growing out of the phenomenal rise in Little River production and the 7000-barrel producer of Superior Oil Corporation in the northeastern edge of Earlsboro. Early this week, however, this comeback was partially checked. Seminole

UNITED STATES CRUDE PRODUCTION TREND



production registered a loss in daily average of 7328 barrels within two days, ending May 7. This loss included a 2000-barrel drop in the big Earlsboro well. Due to pinching of big wells in South Little River to 100 barrels, this area should not show much further rise in the near future. With the agreement to extend drilling restrictions another 30 days, to June 15, Little River should not have dangerous tendencies for another three months. A second point in favor of better markets lies in the fact that Burbank, touted as a potential big high gravity crude producer growing out of new edge development, has lost more than 8000 barrels in daily yield within three weeks. New production there is failing to hold to estimated figures, and the field was at 35,820 barrels last week, near the old level existing prior to the new campaign of drilling there.

Low Gravities Firm

Low gravity crudes in the West Texas district are now experiencing a firm market as result of the enforcement of the Texas Railroad Commission's order that limits daily production in the Hendrick field to a maximum of 150,000 barrels daily. Operators in this field had to cut their combined daily output in half to meet the proration order that became effective May 5, after sending production to a peak level of 321,000 barrels on the day previous.

Following in the wake of the production restrictions in the Hendrick field, the Humble Pipe Line Company entered the market for outside oil to run and purchase for the first time, having arranged to take care of Marland Production Company's allowable production and also to run and purchase 5000 barrels daily from Gulf Production Company. The latter company has been storing every barrel of oil produced. Humble's first outside connection in the field was taken on April 9 when a temporary outlet was given the California Company until the latter completes an eight-inch line to El Paso. A flat price of 60 cents per barrel at the well is being paid for this oil by Humble.

Offerings of spot crude by producers in the Hendrick field will be greatly minimized with proration in effect, as most of those that have been selling to refineries for shipment via tank cars have contracted over the balance of the year about as much daily production as will be allowed. This condition has a tendency to bolster up the crude market in the West Texas district, and producers that have a surplus of crude are demanding a transportation and tank car loading charge above the flat posted price of 60 cents per barrel. Many contracts had been made at the posted price loaded on buyers' cars, thus making the producers absorb transportation and loading charges.

Hendrick field producers, with one exception, have accepted the proration order without official protest, and it is believed that a re-check on potential production will enable Umpire Pardee to have full co-operation. Republic Production Company is reported to have failed to limit its production to the allowable amount during the first two days of proration.

Confidence maintained by North Texas independent refiners of an early increase in crude costs is having a tendency to cause the former to demand a higher price than current quotations on gasolines scheduled for delivery over the balance of this month. U. S. motor gasoline was experiencing a steady demand early this week at a fraction above 7 cents per gallon.

California Stronger

The heavy Eastern and foreign demand for California gasoline has caused a decided stiffening in prices. This, coupled with the greater local consumption, will necessitate the refining of more light oil and a possible reduction in gasoline stocks. The local consumption is running about 15 per higher than during 1927 and this increase is expected to show a slightly greater gain during the rest of the year. Gasoline sales during the first quarter totaled more than 251,000,000 gallons and April consumption was considerably more than one-third of this total. Refinery runs are being increased gradually.

A gasoline war is being waged in parts of Arizona, the retail price having fallen to 17 cents from 27 cents per gallon. The California gasoline market has not been affected in any way, but the price cutting is too close for comfort, since California supplies the bulk of the gasoline and crude used in Arizona.

The supply of light oil is so closely held in California that independent companies are paying a premium for some grades. The curtailment of heavy oil production, the increased demand for gasoline and a slightly better tone in the fuel oil market has affected all grades of crude.

Long Beach continues to gain and will do so for more than a month, but the crude is in demand and the gain is not causing alarm. The larger companies control the situation and only a small percentage of the oil is finding its way to independent purchasers.

Fuel oil is stronger, with few deliveries being made at the old prices. Large government contracts are to be awarded soon and it is known that some former bidders did not submit bids, due to the better outlook for marketing the commodity elsewhere.

Line For Noodle Creek

Fort Worth.—Humble Pipe Line Company is preparing to give the first direct line connection to the Noodle Creek field, located in southwest Jones County, having arranged to build about 15 miles of six-inch line from the Hawley station on its Panhandle-Ranger line.

Noodle Creek field is producing about 1350 barrels daily, and the oil averages 39 gravity. All production is now being moved to a distant tank car rack by Phillips Petroleum Company's small line, and sold to independent refineries.

Details on Critical Fields

	Oil wells completed	Total initial production	Initial per well	Number producing wells	Daily production barrels	Daily production per well	Rigs up	Wells Drilling
WEST TEXAS—								
Hendrick	147	564,255	3,838	161	252,965	1,571*	36	115
Church & Fields	181	201,110	1,111	180	45,475	253*	1	..
Gulf - McElroy	60	52,050	867	60	15,485	258	1	1
Yates	196	1,285,710	6,560	189	50,810	269*	6	8
Totals	584	2,103,125	3,601	590	364,735	618	44	124
TEXAS PANHANDLE—								
Hutchinson County	1,097	544,720	497	967	41,285	43	5	25
Gray County	222	98,345	444	211	18,910	90	13	41
Carson County	177	58,695	332	147	7,290	50	1	6
Wheeler County	42	14,230	339	35	980	28	4	9
Totals	1,538	715,990	466	1,360	68,465	50	23	81
OKLAHOMA—								
Seminole	1,305	1,592,085	1,219	1,092	278,005	254	15	62

(*) Production partially pinched.

Production Rush Precedes Hendrick Proration Enforcement

Only 36 of 164 producing wells had to be tested by committee in assigning quotas to reduce output in line with official order

By H. H. KING
Staff Representative

FORT WORTH, Texas.—Enforcement of the Texas Railroad Commission's order to reduce production in the Hendrick field, West Texas district, to a maximum of 150,000 barrels daily effective 7 a.m. May 5, is now being fulfilled without opposition. All lease owners in the field staged a race for big production during the 10 days prior to the clamping of the lid down on excessive output, and during the two final days of unrestricted production the field registered more than 300,000 barrels daily, with a new peak of 321,500 barrels for the 24 hour period ending May 5. This flow was cut almost in half on the following day, as J. D. Collett, chairman of the proration advisory committee, reported that the operators had pinched their wells to a combined flow of slightly above 170,000 barrels.

H. N. Pardee, umpire, and the advisory committee of seven operators prepared the necessary data on potential production and producing acreage to start the proration off on schedule. These parties began their task Tuesday, and had notified each producers in the field as to each one's allowable production late Friday.

Wells Tested

Only 36 of the 164 producing wells qualified for the first period of proration had to be gauged for potential production, since the remainder had been flowing practically wide open for the past week in a final effort to fill up storage without restrictions. The run tickets for the wells not gauged by the umpire and committee were accepted as a basis of determining the potential output of said wells, while those gauged were flowed only one or two hours. Marland Production Company's T. G. Hendrick 3, located on the north end of the field, was the last producer completed in the group to be allowed to produce during the first period, ending 7 a.m. May 16.

The potential production of the field was placed at 521,601 barrels by the proration authorities, with 164 wells on production. The total number of 40-acre units in production amounted to 76.75, with two and one-quarter units allowed, but not assigfined. Cranfill & Reynolds et al's three leases with five completed wells on a total of 45 acres in the center and north end of the field registered the highest potential production, having been credited with 90,755 barrels. This property will be entitled to produce at rate of 14,235 barrels daily during the first period, although outstanding contracts with Magnolia Petroleum Company and the American Petroleum Company call for a combined maximum daily delivery of 21,500 barrels.

Hendrick Production

Estimated daily production in the Hendrick field for the ten days prior to the enforcement of the Railroad Commission's order to shut in to 150,000 barrels daily is given below:

Date—	Number Wells	Daily Prod.
April 26	140	226,650
April 27	144	258,250
April 28	144	248,150
April 29	147	251,850
April 30	147	269,700
May 1	145	263,750
May 2	149	294,550
May 3	149	279,900
May 4	154	300,200
May 5	158	321,900

The joint properties of the Southern Crude Oil Purchasing Company, Dixie Oil Company and the R. A. Westbrook Interests earned the largest daily output. These interests have 15 forty-acre units in production, with 27 wells making a combined potential flow of 49,549 barrels, and the allowable production is limited to 21,362 barrels daily. Roxana Petroleum Corporation earned the second largest daily production for the ensuing period, having eight full units and a potential flow of 74,623 barrels daily, and will be allowed to produce at rate of 18,321 barrels daily. Roxana also owns a half interest with Landreth in 5,555 barrels of allowable production, thus giving Roxana a net production of 21,098 barrels daily.

Atlantic Oil Producing Company and Collett-O'Keefe's 160-acre "F" lease, with three wells on production, earned an allowable production of 11,110 barrels daily from two 40-acre units and a combined potential output of 64,063 barrels daily. Atlantic receives one-half of the above, and earned 13,934 barrels daily output from its 17 wells located on seven units, thus making third position on the production list. Murchison Oil Company & Cranfill Brothers Oil Company's five wells earned a production of 2,266 barrels daily, but current production is only 903 barrels, according to the official figures. This is the only property that was allowed more than it could produce.

Humble Cut Half

Humble Oil & Refining Company's allowable production is limited to 14,136 barrels daily, or less than one-half the amount that has been produced daily for more than a month. This restriction placed on Humble's production will automatically leave the Humble Pipe Line Company with 50 per cent. idle line capacity out of the field. However, Humble

(Continued on page 40)

HENDRICK PRODUCTION PRORATION BY COMPANIES
As fixed by the Committee for the first half of May

Operator	Wells	Number 40-Acre Units	Daily Allowable Prod. to May 16	Potential Production
Southern-Dixie-Westbrook	27	15	21,362	49,549
Roxana Petroleum Corporation	20	8	18,321	74,623
Independent Oil and Gas Company	15	6½	8,151	13,799
Marland Production Company	1	¾	1,335	4,320
Pure Oil Company	10	8	13,466	40,843
Gulf Production Company	11	6	10,070	30,437
Cranfill & Reynolds	6	1¼	14,235	90,755
Texon Oil & Land Company	4	2	3,439	10,716
Landreth Prod. & Roxana	8	4	5,555	12,235
Magnolia Petroleum Company	8	2	2,310	2,866
The California Company	8	2	2,746	5,897
Murchison & Cranfill	5	2¼	2,266	903
Atlantic Oil Producing Company	17	7	13,934	50,705
Atlantic & Collett	3	2	11,110	64,063
Republic Production Company	4	3	5,403	17,779
Humble Oil & Refining Company	17	7	14,136	52,111
	164	76¾	147,839	521,601
Units not yet in production	..	2¼	2,161	.....
Totals	164	79	150,000	521,601

Amalgamated Gas Associations Make Stronger Unit

First session since union of Natural Gas Association with American Gas Association brings together largest gathering

By SPENCER W. ROBINSON

DALLAS, Texas.—The center of the gas industry is steadily pushing further westward each year as a result of the aggressive development which is under way in the Southwest districts, so gas men were told here this week at the opening of the annual meeting of the Natural Gas Department of the American Gas Association. Speakers were unanimous in their recognition of the important position now held by the Southwest territory in the gas industry and were joined by the many gas men present in an enthusiastic praise of the remarkable growth and progress which is being shown by this section.

Educational exhibits, including all recent improvements in equipment and mechanical practice for the natural gas industry, were largely centered around those developments which have resulted from the problems encountered in transporting and utilizing natural gas in Southwestern fields. At the same time those subjects on the convention program which touched upon operation and utility methods in the Southwest proved most popular as many members of the organization familiarized themselves for the first time with the extent of the natural gas industry in this section, and its future possibilities.

The meeting here is the first to be held since the Natural Gas Association of America was merged with the American Gas Association and is singular in that it is by far the largest and most successful gathering ever attempted by natural gas men. Many members of the Natural Gas Association were opposed to the amalgamation with the American Gas Association and it was expected that this might have some influence upon attendance at the meeting. Early in the week registrations had passed the 1500 mark and by the close of the convention will no doubt reach between 1800 and 2000.

It was pointed out by N. C. McGowan, chairman of the Natural Gas Department, and officials of the American Gas Association at the first regular session Tuesday morning, that the organization under its combined program is able to sponsor and carry on a much larger technical program than would otherwise be pursued.

A review of what the organization is doing along technical lines was given at the afternoon session by R. M. Conner, director of the American Gas Association testing laboratory. An increasing interest is being shown in the technical work of the Association and in the Natural Gas Department four active committees have been able to accomplish much along this line. The major problems being considered by the Natural Gas Department have been grouped under pipe line flow and gas measurement committees, with a main technical and research committee supplementing the work.

A meeting of the main technical and research committee was the first business to come before the convention here Monday and was in effect a forum of discussion of the many technical phases of the business was entered into by a large number of engineers and technical men of the industry. The results of this meeting are to be presented in the annual report of the main technical and research committee later in the week.

A meeting was also held Monday by the managing and advisory committees at which the general business routine of the organization was discussed. This was followed by the annual dinner held in the English room of the Adolphus Hotel where N. C. McGowan and other prominent leaders of the industry made brief talks.

The equipment exhibits were opened to attending gas men and the public early Monday morning and attracted considerable attention. More than 200 manufacturers had displays of their products in the manufacturers building and equipment exhibited ranges from the smallest size of gas pipe to the largest type of pipe line ditching machine, with a large assortment of gas stoves and appliances.

Most of Wednesday is to be devoted to a round table discussion of questions which members have been requested to deposit with J. D. Creveling of Henry L. Doherty & Company, who will preside as chairman of the session.

Thursday morning will be taken up with the election of officers, reports from the various committees and the selection of a meeting place for the next meeting.

Entertainment for the convention included a vaudeville and smoker Tuesday night and the annual banquet Thursday night.

THE GAS INDUSTRY'S PROBLEM

From a speech by N. C. McGowan, chairman Natural Gas Department, American Gas Association, Dallas, May 8

"IT is essentially important that we as an industry be so armed that if in the future we are confronted with the proposition of irresponsible interests going before the people of a city seeking franchises for the introduction of our product we can act intelligently and fight effectively. Remember that the citizens of these municipalities are uninformed about the natural gas business, they do not know that it is being managed scientifically to give them the best possible gas service. And being uninformed it is but natural that their action on such propositions often may seriously cripple and impair the investment of the members of our industry who are already in that field.

"I believe this to be so serious that it warrants our action. Unfortunately we cannot prevent the inception of such schemes nor have we any jurisdiction over those responsible for their inception. But we can correctly inform the public about them—show them where they are economically incorrect. To do this, however, we must have the necessary information at hand ready for instant use. No good for us to frantically start to gather it after such a scheme has been started in some locality. It must be gathered, assembled and compiled for our entire industry long before this time. Then, with this data available in one central place, we can intelligently launch our attack on such schemes wherever they appear and whenever they appear."

Progress Made in Study of Pipe Corrosion and Protection

Paper read before Natural Gas Department of the American Gas Association, Dallas Convention, May 9, 1928

By W. G. HAGEN
East Ohio Gas Company, Cleveland

ONE of the chief concerns of all companies owning underground pipe line systems is the problem of pipe corrosion and the proper methods of effectually protecting steel pipe from unfavorable soil conditions. The importance of this matter is at once apparent when due consideration is given to the enormous investment in gas mains and services, some of which are constructed under expensive pavements, making the cost of repairs and replacements to them almost prohibitive.

Considerable work has been performed by various agencies on the study of soils in various cities to determine, if possible, the relative effect of the different soils on underground piping. The United States Bureau of Standards has been particularly active in this work, and has issued several valuable papers on the subject.

Studies of this kind are very important, and while a company operating in the northern part of the country may not be vitally interested in the soil corrosion problems of companies operating in the southern part, the information contained in these reports furnishes a basis for any particular company to make a study of the different soils encountered in the territory in which they are operating, so that an estimate at least can be made of the life of the gas mains and services which are in use at the present, or may be constructed there at some future time.

It is true that some very conflicting reports are obtained at times by companies making studies of this kind. These, however, are the exception. The value of accurate information in the form of permanent records showing the nature of the various soils with reference to their tendency to promote corrosion, cannot be overestimated.

It is quite a common occurrence to find soils of widely different corrosive characteristics in the same city. The identical soil in any location is very likely to give a varying corrosive characteristic with varying drainage conditions. Soils which have little or no corrosive action on underground piping in dry territory often promote corrosion very materially in wet, marshy territory. It must be understood, however, that the chemical content of the soil itself is not always the dominating factor in occurrences of this kind but rather the conditions which are set up by the wet soil which aids other agencies, such as corrosive ground water.

Accurate information concerning the character of the soil in all parts of territory through which the underground piping system is to be constructed or in which an existing system is being maintained is worth many times the cost of obtaining this information.

Obviously, it is just as uneconomical to spend money on pipe protecting materials in treating pipe which is being laid in soils which are non-corrosive as it is to lay uncoated pipe in soils which are corrosive. The main difference in these two cases, of course, is that in coating pipe which needs no protection the error is rarely uncovered; while in the case of not coating a pipe line which has been protected and which requires premature repairs or replacement, this fact is often brought to the attention of city officials and the public by the breaking of pavement in important thoroughfares. Of the two evils, there is little question in the minds of thinking operators which course should be pursued.

Some companies have been using elaborate systems of inspecting mains and service for years, and have every complete records of these inspections and the condition of their property. In a few cases this information has been used to compile tables by the aid of which the engineer is able to make an estimate of the probable condition

Active at Dallas Gas Meeting

Left to right—J. D. Creveling, Henry L. Doherty & Company, New York, past president of the Natural Gas Association and active in the technical work of the organization. H. C. Morris, president of the Dallas Gas Company and in charge of arrangements for the Dallas meeting. N. C. McGowan, the Palmer Corporation, Shreveport, Louisiana, chairman of the Natural Gas Department. Col. M. W. Walsh, Louisville Gas and Electric Company, Louisville, Kentucky, and one of the founders of the association.

of the mains and services in any location.

The corrosion of steel pipe is generally conceded to be an electro-chemical process which can be greatly retarded by a study of the existing conditions and the application of one or another of the recognized methods of preserving the pipe.

A brief outline of what occurs during the process of corrosion might not be amiss. Steel pipe which has been exposed to the air is enclosed in an invisible film of condensed moisture, and has a tendency to lose electrons and to go into solution.

If the pipe is made of homogeneous metal and if the air is absent the action ceases as soon as a small quantity of metal has dissolved. The process of corrosion continues, however, in the presence of air and the intensity of the action depends largely on the amount of air and moisture which is present. If the metal is not homogeneous and free from mechanical strains, or if it has an imperfect surface with the presence of mill scale, an electrolytic action is obtained which promotes corrosion.

What influence the quality of the metal, of which standard steel pipe is rolled, has on its corrosive resisting qualities is a question which seems to be of less importance than how the pipe is rolled, and the quality of its surface finish. Mill scale is electro-negative to iron and tends to hasten the process of corrosion very materially. A smooth, clean surface, free from marks of any kind is highly desirable. Pipe manufacturers seem to have more trouble in producing a clean, smooth surface on large pipe than on the smaller sizes. Marks of one kind or another which appear on new pipe direct from the mill are often mistaken later for pits or attributed to electrolysis.

Several grades of alloy steel pipe have been placed on the market recently which seems to resist ordinary soil corrosion in a satisfactory manner. The additional cost of these materials is such as to preclude their use except in special cases. They are also in competition with coated steel pipe and at present seem to be somewhat more expensive.

There have been few developments in the materials which are commonly used in the protection of steel pipe from soil corrosion during the past few years. Considerable data has been gathered and issued to the public on the various characteristics of these materials and recommendations made as to the proper specifications to be used in ordering these materials and preparing them for application to the pipe.

The popular methods of protecting steel pipe in vogue at the present time will be divided into three groups, which comprise all painted or dipped coatings in the first group, coatings reinforced with a wrapping in the second group, and molded materials in the third group.

Before applying any kind of a coating to steel pipe the pipe must be perfectly clean, and free from mill scale, grease and rust. It is highly desirable in some cases, and absolutely essential in other cases, that the pipe be perfectly dry.

Oil paints commonly used for preserving steel structures exposed to the air are not generally recognized as being suitable coatings for underground pipe systems for the reason that they become soft and porous in a comparatively short time and as a general rule offer little protection.

Melted asphaltum with melting point of about 160 degrees F., when properly applied to perfectly clean pipe under suitable weather conditions, often gives results which are satisfactory. For effective protection these coatings should be over one-sixteenth of an inch thick, should adhere tightly to the pipe and should not be brittle when cold, nor sticky when exposed to the sun.

There are many modified forms of asphaltum base paints on the market, some of which seem to give satisfactory results to the companies using them. Some users of steel pipe prefer the hot dipped coating for the reason that the pipe may be preheated before dipping. This method insures a coating of proper thickness on dry pipe.

The wrapped pipe coating was designed to protect pipe from corrosion in soils which prematurely destroy the protection afforded by the painted or dipped coatings, and as an aid in protecting the coating in transit. In this process the pipe is thoroughly cleaned, then heated and transferred to the coating and wrapping machine. The object of heating the pipe is to drive off all moisture and to prevent the asphaltum from chilling when coming in contact with the pipe. The pipe is then thoroughly coated with asphalt heated to a temperature of about 350 degrees F. The wrapping material, which is usually thin sheeting or burlap, is then wrapped spirally around the pipe which causes the hot asphaltum to soak through the wrapping material. Additional asphaltum is applied to the wrapped pipe so that the fabric is completely enclosed. The pipe is then removed to the drying rack. A priming coat of thinned asphaltum or coal tar is often applied to the pipe before it enters the wrapping machine, to assist in attaining a proper bond.

A waterproof cement grout made of one part of Portland cement to two parts of suitable sand has been used with good results. Several companies have reported that this is the preferred method of protecting pipe lines through marshy country containing highly corrosive ground water. The pipe is usually given a bituminous dip coat before enclosing it in the cement casing which is usually about two inches thick. Steel forms are generally used to mold the cement around the pipe. This coating is a very expensive one to apply and is used only in very special cases. To be effective, this cement casing should be waterproof.

In a similar manner, asphalt having a melting point of about 150 degrees F. has been used on pipe where soil conditions have been such as to warrant special treatment. Wooden forms are commonly used for this purpose and the pipe line supported on glass blocks so that the asphalt flows completely around the pipe. Before applying this coating the pipe must be thoroughly cleaned and entirely free from mill scale, grease and moisture.

How much protection against electrolysis is obtained by the use of any practical method of treating pipe now in general use is an open question. Under some conditions, certain coatings seem to protect the pipe in a measure, but under other conditions the same coating seems to do little or no good. Insulating couplings, properly applied, have been used with more or less success in protecting the pipe from electrolysis. The best method of preventing corrosion due to electrolysis, is to keep the current off the pipe in so far as possible. This is not an easy thing to do and requires the services of men thoroughly familiar with the problem. The cooperation of the companies operating the electric railway and light systems is absolutely essential in this work. Far-reaching results, however, are often obtained by an intelligent survey of the situation in conjunction with engineers representing the electric companies. These surveys often uncover the real cause of the trouble and indicate to both the gas company and the electric company what changes must be made by each of them.

Problems which cannot be solved quickly and decisively are apt to become uninteresting to the men upon whom rests the burden of supplying the correct answer. Pipe corrosion and protection falls under this heading. For many years, almost since the introducing of wrought iron and steel pipe, gas company engineers have discussed the relative merits of coated or treated pipe as compared with uncoated pipe, and the relative merits of one method of protecting the pipe against soil corrosion as compared with other methods.

Some companies have made considerable progress in solving the problem, at least in so far as their particular soil conditions are concerned; other companies have given up for various reasons, after expending more or less money on the proposition, and still other companies have stood by, contending that a satisfactory method of doing the work has not been developed for their particular conditions and that they would not be interested until such time as definite results could be assured which would warrant the cost of the protection. All companies, however, recognize the advisability of using some method of protecting their investment, and indications point to a more intensive study and at least a partial solution of this problem.

Problems of the Natural Gas Industry In California

Paper read before the Natural Gas Division of the American Gas Association, Dallas Convention, May 8, 1928

By HARRISON P. GEORGE

General Superintendent Natural Gas Production and Transmission, Southern California Gas Company

DURING the past 18 years marvelous oil and gas developments have taken place in Southern California. Fields have been discovered, quickly reached flush production, declined sharply for some months, and then entered a period of gradual and steady decline.

The first producing oil well was drilled in Pico Canyon, near Newhall, in 1870, but it was not until 1894 that natural gas was utilized for fuel purposes.

In 1909 and 1910 large wells were completed in the Buena Vista Hills. These wells were drilled for oil, but encountered gas in the upper horizons. Here high pressures, around 1200 pounds, caused fittings to burst, and many wells got beyond control. With this production of gas began our first problem of utilizing a natural resource not produced heretotore in California. To accomplish this, the California Natural Gas Company in 1910 built a line to Bakersfield, 40 miles away. A part of this transmission line is in operation today. Shortly after this project was started, Messrs. Blach and Kerckoff of the Southern California Gas Company saw the possibility of bringing gas to Los Angeles. The Midway Gas Company and Northern Exploration Company were organized, contracts secured, and wells drilled in the Buena Vista Hills district. A substantial gas reserve was developed, and a 12-inch pipe line was constructed in 1912 from Taft to Glendale, a distance of 111 miles. This line was laid with plain end pipe and rubber packed couplers. The construction problems were many; a high mountain range had to be crossed, roads were few, and transportation facilities were inadequate. It took six mules 28 days to haul as much pipe to a point in the mountains as a modern five ton truck and trailer will haul in one day on the present concrete roads.

Oil development in the Buena Vista Hills area was very attractive during this period, and many wells were completed which produced both oil and gas in large volume. The process of extraction of gasoline from casinghead gas developed, and led to the sale of dry casinghead gas delivered from plants after gasoline extraction. This marked the beginning of the conservation of casinghead gas. The production of dry casinghead gas increased rapidly until it became the principal source of natural gas in California. This involved new problems in storage and utilization, as gas from this source was produced and delivered at a uniform rate throughout the day, regardless of the demand on the system of the distributing utility.

Delivery to Los Angeles

In the Buena Vista Hills field casinghead gas was delivered at 100 pounds pressure by the extraction plant, and in order to raise this to sufficient pressure to enter the transmission system, the first natural gas compressor plant west of the Rocky Mountains was built by the Midway Gas Company and placed in operation during 1914.

April 28, 1913, witnessed the delivery of the first natural gas to the Los Angeles metropolitan area. The insufficient supply, at this time, did not justify serving straight natural gas to consumers in Los Angeles, so the natural gas was mixed with manufactured gas made from oil. This mixed gas was of higher heat content than the oil gas previously served.

During the summer of 1913, the casing collapsed in the water well at the gas plant of the Southern California Gas Company at Los Angeles. This, of course, shut down the manufacturing of oil gas until the necessary repairs could be made. I quote from an article by Mr. F. J. Schafer: "Water could be obtained in no other way, and since the manufacture of oil gas was impossible without water, we hit on the expedient of passing natural gas through the gas generators at medium heat, transforming it in this way from its natural state to one more nearly that of the manufactured gas, thus insuring evenness of quality for the use of our customers until water was again

GAS BUSINESS IN CALIFORNIA

The magnitude of the natural gas business in California is shown by the statistics for December, 1927.

Casinghead Gas Production	20,051,792 Mcf
Dry Gas Production	851,613 Mcf
Total	20,903,405 Mcf
Utility Company sales and use	9,110,783 Mcf
	*11,792,622 Mcf

*Note: Represents field fuel, gasoline plant usage, refinery fuel, pump station fuel, unaccounted for and blown to air.

Natural Gas Sales and Company Use
Gas Utility Companies State of California

1927	Los Angeles, Orange, Riverside, and San Bernardino Counties	Kern County	Ventura, Santa Barbara and San Luis Obisop Counties	Total
January	6,999,707	1,388,643	330,505	8,718,855
February	6,140,706	1,193,828	251,549	7,586,083
March	6,699,756	1,202,908	278,874	8,181,538
April	5,997,519	1,058,637	261,356	7,317,512
May	5,539,889	978,566	283,344	6,801,799
June	5,504,404	910,031	305,993	6,720,428
July	5,020,643	943,221	279,752	6,243.616
August	5,104,405	956,668	273,921	6,334,994
September	5,103,857	1,055,918	414,220	6,573,995
October	5,768,695	1,193,448	468,987	7,431,130
November	6,129,637	1,068,906	467,359	7,665,902
December	7,422,355	1,280,090	408,338	9,110,783
Total	71,431,573	13,230,864	4,024,198	88,686,635

All figures in Mcf.

NOTE: This indicates an average two hundred and one million cubic feet daily in summer and an average of two hundred and ninety-four million cubic feet daily in winter for the year 1927.

available." From this beginning, the process of reforming natural gas developed, which later proved to be of material benefit both to the natural gas producer and the customer.

As gas was developed in other oil fields, transmission facilities were installed to deliver gas to markets readily available. Early in 1914, Brea-Olinda field in the Los Angeles Basin produced sufficient casinghead gas to insure a constant supply and the Southern Counties Gas Company laid transmission lines to Fullerton, Orange, Anaheim, Santa Ana, and contiguous territory in Orange County. The service of straight natural gas replaced that of manufactured oil gas.

Developments during 1914 and 1915 in the Coyote Hills field east of Los Angeles increased the supply of natural gas. In December, 1915, the first natural gas transmission line from a Los Angeles Basin field to Los Angeles was placed in operation when the Midway Gas Company completed an eight-inch welded line from Coyote Hills field. In 1916 the Whittier district, and a year later the Pomona district, both in the eastern section of Los Angeles County, were converted to a straight natural gas basis by Southern Counties Gas Company.

Welded Line

Welded pipe line construction was inaugurated for the first time on the Pacific Coast for high pressure natural gas transmission on this eight-inch line from Coyote Hills to Los Angeles. This type of construction has since been adopted by practically all pipe line companies operating in this territory for the transmission of water, oil, gasoline, and gas through steel mains.

In 1916 Ventura Avenue field was discovered. After several years of development, sufficient supply was available for service to Ventura, Santa Paula, Santa Barbara and adjacent territory.

Montebello field, discovered in 1917, and Richfield field, discovered two years later, further augmented the supply. The Industrial Fuel Supply Company, laid an eight-inch line, 22 miles long, from Richfield field to Long Beach, and increased the supply of natural gas in the southern part of Los Angeles County.

By the end of 1920 demand exceeded the transmission facilities, and that year the Elk Hills field, discovered in 1919 with its tremendous dry gas supply, was connected with the Midway Gas Company's main compressor station. In the spring of 1922, two parallel pipe line loops were constructed along the line from Taft to Glendale to increase the supply coming to the Los Angeles metropolitan area. Kern County loop was 22 miles of 12-inch and the Los Angeles County loop was 35 miles of 12-inch.

Los Angeles, Beverly Hills, Pasadena, and the Santa Monica Bay region continued to be served with a mixed gas, because the tremendous domestic winter demand could not be taken care of by the supply of straight natural gas available for this service. The ratio of winter to summer domestic sales at present is approximately five to one. Under such conditions, a mixture of reformed gas with natural gas in summer, and a mixture of either reformed or oil gas with natural gas in winter gave a uniform heat content gas to the consumers. Oil gas was used to augment any shortage in the natural gas supply. Here was injected another problem, that of maintenance of uniform b. t. u. value under mixed gas operation.

Thus, by the end of 1921, all the communities adjacent to oil fields and adjacent to the trunk transmission lines were served with either straight natural gas or mixed gas.

The intensive development and enormous gas production in Santa Fe Springs, Huntington Beach, and Signal Hill during 1922 and 1923 emphasized the ever recurring problem of utilization. Owing to the town lot development the production in these fields reached a maximum of 998,000,000 cubic feet a day in September, 1923, exclusive of the dry gas available at Santa Fe Springs from a horizon overlying the oil sands. There was an enormous gas wastage.

A Market Problem

The problem confronting the utilities at this time was the consideration of probable decline of this great production of natural gas, the development of a market to utilize available gas, and finally the installation of such gas compression and transmission facilities as could be amortized before the gas supply was gone. This proved to be a very perplexing matter. One plant consisting of twelve 160 horse-power units at Santa Fe Springs was dismantled without ever having run to maximum capacity. Transmission capacity from this field was likewise over-built.

After Santa Fe Springs, Huntington Beach, and Signal Hill, came Dominguez in 1923; Athens-Rosencrans and Torrance in 1924; Inglewood in 1925; and Seal Beach in 1926.

Deep sand developments in Brea-Olinda, Ventura Avenue, and Richfield in 1926, and Signal Hill, in 1927, augmented casinghead gas production.

Today the development of the Ventura Avenue field, 70 miles from Los Angeles, has reached the point where utility companies have been justified in installing three trunk transmission lines to the Los Angeles metropolitan area. With 400 pounds initial pressure, these lines have a capacity of 115,000,000 cubic feet a day.

Present Supply

At the present time gas for commercial purposes is being produced in the following fields: Athens-Rosencrans, Belridge, Brea-Olinda, Buena Vista Hills, West Coyote, Dominguez, Elk Hills, Huntington Beach, Inglewood, McKittrick, Montebello, Richfield, Santa Fe Springs, Santa Maria, Seal Beach, Signal Hill, South Mountain, Torrance and Ventura Avenue.

From the above historical outline, it is apparent that one of the chief problems from the inception of the development of casinghead gas was the conservation and utilization of that product.

Reforming natural gas, as a substitute for oil gas, utilized large volumes which would otherwise have gone to waste during the period when transmission and storage facilities were inadequate to satisfy peak domestic demands. This process, in conjunction with the mixing of reformed gas with straight natural, made it possible to deliver gas of uniform heat content to domestic customers. For a detailed description of the process reference is made to a paper on Reformed Gas by H. L. Masser, appearing on page 724, volume 15, of the Pacific Coast Gas Association Proceedings.

Reforming of natural gas was discontinued January 27, 1927, when the Los Angeles metropolitan area was converted to a straight natural gas basis.

Storage

In 1927 gas storage experiments were conducted in the Dominguez and West Coyote Hills fields with excess casinghead gas production, the object being to store gas in depleted oil sands. The success of these experiments has led to the formation of plans for additional storage this summer. In 1927 gas production in the Ventura Avenue field was curtailed by shutting in oil production for a time; during March, 1928, another curtailment to the extent of about 40,000,000 cubic feet a day took place. By these co-operative measures casinghead gas is held in the oil formations in the field for future use.

Due to the limited supply of natural gas available during 1913, 1914, and 1915, no industrial business was connected to our lines. From 1916 to 1919, inclusive, the start of a permanent industrial business was made, although the volume sold for industrial purposes was relatively small. The tremendous developments in 1922 and 1923 produced large volumes of gas literally at the doorstep of the Los Angeles metropolitan area. Drilling impetus spread over the entire Los Angeles Basin and gave rise to a large volume of oil field industrial business. The large volume of oil produced increased the usage of fuel gas in refineries. In many instances the oil companies made agreements with the utility companies for transportation of their gas to refineries and pump stations, paying a transportation charge for the service. The utilities had, meantime, installed large pipe lines and compressor plants. When the peak of the oil field business

(Continued on page 40)

Laboratory Aid in Improving Use Of Natural Gas

Paper read before the Natural Gas Department of the American Gas Association Convention, Dallas, May 8, 1928

By R. M. CONNER
Director of Laboratory of the Association

LIKE other progressive industries, the gas business several years ago came to the realization that one of the most essential factors in insuring its future progress was the successful utilization of its product. Regardless of the relative value of any of our present or new fields for future expansion, we will always be faced with this basic fact. It was in recognition of this economic factor that a united industry established the gas appliance testing laboratory in Cleveland, Ohio, during 1925, and dedicated it to the improvement of its public service.

Stewart Chase and F. J. Schlink in their new book entitled, "Your Money's Worth," state:

"Nothing, of course, could be happier than industry regulating itself in the public interest. * * * The gas companies and some insurance groups appear actually to have done it."

When one takes into consideration the large number of different interests to be recognized, the difficulties encountered in establishing a national testing agency, the complexity of our utilization problems, and the fact that the gas industry has been successful in meeting all these conditions, these words of praise seem to have been very well earned.

The former Natural Gas Association assisted financially in founding the testing laboratory. One of its past presidents has been chairman of the laboratory managing committee since its formation. While our establishment has always given fully as much, if not greater importance to the solution of natural gas utilization problems than to the manufactured gas side, natural gas men can now, since the amalgamation of the two great associations, take an even greater interest than ever before in our testing and research programs.

The need for national regulation of our gas appliance situation was recognized for a number of years prior to the establishment of the laboratory. Many gas companies had long maintained laboratories of their own. These agencies served a very useful purpose, particularly in the solution of many of our production problems. As far as the appliance situation, however, was concerned, their findings anticipated only local conditions which were not of particular value to gas companies that did not maintain laboratories of their own and were situated in other localities. The varying specifications of these agencies, as well as the individual preferences expressed by countless dealers, naturally added to the production costs of gas appliances by increasing the number of manufacturing difficulties and preventing any comprehensive plan of standardization.

Standardization of Appliances

Standardization of our gas appliance manufacturing processes probably represents the greatest possibility for increasing efficiency and lowering production costs existing in that business today. One of our gas range manufacturers, for example, produces as many as 8000 different kinds of ranges. It is only logical to assume that, in this age of standardization, such concerns naturally would feel the effects of competition very keenly. Our manufacturer's section should consider the adoption of an effective program of this kind and work out the details of its application.

Our new laboratory when completed will be the largest and most completely equipped institution of its kind in the world. When finished the gas industry will have expended approximately $1,500,000, which includes investments made by the appliance manufacturers, in the interests of better public service. This seems like a rather large sum and it is only logical that you should be interested in learning what has been accomplished by the expenditure of such a large amount of money.

In the short space of time allotted me, it is entirely impractical to attempt to do more than merely outline in a general way some of our major accomplishments. Eighty-five and three-tenths per cent. of all of the appliances submitted to our establishment have been improved until they complied with our performance requirements, which include the examinations for completeness of combustion. What is perhaps even more striking is the fact that 99.6 per cent. were improved from the standpoint of construction. New gas ranges were submitted that produced as high as two per cent. carbon monoxide in the air-free products of combustion when operating under ideal conditions. Several water heaters examined disclosed quantities of carbon monoxide as high as 12 per cent. in the stack gases. All such appliances have been corrected in construction and design until they will now operate with absolute safety to the customer, if properly installed, under all reasonable conditions of service. While the majority of gas appliance manufacturers are still producing unapproved appliances, the greater number of appliances sold during the present year will bear the Blue Star Seal of Approval. It is estimated that 30 per cent. of the gas boilers, 30 per cent. of the furnaces, 50 per cent. of the water heaters, 60 per cent. of the space heaters and 75 per cent. of all gas ranges sold during the year 1928 will bear the approval seal of the A. G. A.

In slightly over two years' operation our laboratory has examined and approved from inspection or test 89 gas boilers, 41 warm air furnaces, 16 types of flexible tubing, 180 water heaters, 405 space heaters and 6860 gas ranges, making in all a grand total of 7591 types of approved tubing and appliances. All of our company members and a large number of gas appliance dealers are being kept up to date on this subject by the list of approved appliances which is revised and published complete each month.

All of our gas companies, and particularly those in the State of Texas, are co-operating to the fullest extent in bringing about a condition where nothing but certified equipment will be offered to the public for the safe and efficient use of manufactured or natural gas.

Seal of Approval

Our requirements specify that every approved appliance must be marked permanently with the laboratory's Blue Star Seal of Approval. This emblem signifies that the appliance to which it is attached meets the industry's basic standards for safety and efficiency in performance and reasonable durability in construction. In its broadest sense it is not an index of monetary value; in fact, it may have no particular relationship to this item. The sales price of appliances depends on considerations which are absolutely foreign to the purpose of our approval requirements. For example, our standards do not specify how elaborately an appliance must be constructed, yet this one item is probably the prime consideration in establishing its purchase price. It is perfectly logical to conceive of an approved gas range retailing for as low as $40 and another for as high as $250. Both, however, would meet our fundamental requirements and accomplish with relative degrees of conveni-

ence the purposes they were intended to perform.

Our seal has often been referred to as the "Hallmark of Quality." This designation is correct if we are considering the quality of service rendered, but inaccurate if we analyze the appliance from the standpoint of elaborateness of construction.' Naturally we desire to have our customers purchase the very best appliances they can afford, but to shape our program so that only the most expensive types of equipment could be approved, would be defeating the purpose for which the laboratory was established; namely, that of protecting the general public. It is much better to set up the results we desire accomplished and leave it to the manufacturer's ingenuity from that point on.

A development of interest to every man is the large number of cities throughout the country that are interesting themselves in gas ordinances. Baltimore, Maryland; Hartford, Connecticut; Berkeley, California; Los Angeles, California; Cohoes, New York; Greenwich, Connecticut, and New York City are all enforcing some type of legislation regulating the sale and installation of gas appliances. Some 45 other large cities, among which may be included almost every large city in the State of Texas, are also considering similar kinds of legislation.

The American Gas Association is not fostering the enactment of gas ordinances. However, where a real need for legislation of this kind is expressed by interested city officials and the local gas company, an effort is always made to guide such activities in the right direction. A model ordinance quite similar in most of its essential details to the Baltimore draft is now being prepared and will shortly be submitted to our executive board of approval. When completed it will be available for distribution to anyone interested in such subjects. The basis for all of the ordinances mentioned is that the appliances referred to must meet the requirements established by interested governmental experts and our appliance committees. Consequently, the association is not only interesting itself in improving gas burning appliances, but, where necessary, is also assisting interested municipalities in adopting ordinances to enforce their use.

The city of Baltimore, Maryland, was the first one to adopt an ordinance of this kind and its first full year's application shows a reduction of approximately 38 per cent. in the number of accidental asphyxiations occurring in that city.

Mixing Gases

Early in 1926, the committee on engineering and economic survey of our technical section decided that the problems connected with the practice of mixing gases were of major importance to the advancement of gas in the field of competitive fuels and assigned their solution to the laboratory. The practice of mixing gases not only makes possible the augmentation of failing supplies of natural gas, but also permits the use of gases often cheaply available as by-products of other industries. It opens the way to varying plant equipment, thus leading to economy in production. By variations in the proportions of the component gases where mixed gases are served, variations in the markets for both raw materials and by-products of gas manufacturing processes may also be used to the greatest advantage in reducing production costs. At the same time, the use of one process for usual demands and another for peak loads may materially lessen capital investments for operating companies. In short, the practice of mixing gases tends to increase the flexibility of gas producing equipment from the standpoint of both economy and plant operation.

The mixed gas research committee, which includes a number of prominent natural gas men, supervises the activities connected with our mixed gas research work. This group decided that the first stages of the investigation should be devoted to a study of the effect of variations in the factors of gas service which have a direct effect on appliance operation. Many investigations have been carried out on this subject by different gas companies for the solution of some local problem in mixing of gas. The results of their work, however, cannot be applied nationally on account of the exceedingly large number of different conditions that must be taken into consideration. It was reasoned that a study of fundamental factors would develop information that could be applied to the solution of any of our present gas mixing problems as well as those which might arise in the future. Consequently, it was decided that the most accurate and prompt method of determining the desired results experimentally would be to isolate each of the controlling factors by keeping all others constant during each step of the investigation. Variables controlling the successful mixing of gases are specific gravity, heating value, chemical composition, and gas pressure. The last mentioned item becomes of importance only when it is varied to compensate for specific gravity or heating value changes.

Gas company executives considering the advisability of mixing gases are usually more interested in allowable variations in specific gravity than in any other similar item. Therefore, it was decided to investigate this phase of the problem first. Experiments were begun on manufactured gas mixtures with resultant heating values of about 550 b. t. u. and specific gravity variations of from 0.37 to 0.65.

It was found that for the usual types of domestic gas appliances and several types of industrial equipment that specific gravity variations of 10 per cent. downward and 20 per cent. upward could be accommodated without any appreciable reduction in the quality of service rendered. These findings were later checked on manufactured gas mixtures of 450 b. t. u. per cubic foot and are to be verified in the near future by testing mixtures of manufactured and natural gas. However, they now seem sufficiently conclusive to be regarded as at least approximately correct for any kind of city gas.

At the present time, allowable variations in heating value are being studied by mixing blue and natural gas. In this particular series of tests, specific gravities are being kept constant so that the effect of varying this item may be eliminated from these considerations and basic information secured at the same time on allowable limits in mixing natural and blue gas as well as the permissible limits for varying heating values. Some research work conducted for the purpose of determining the utilization characteristics of manufactured gas enriched with natural gases has also been completed. To date, approximately 15,600 separate tests have been performed in determining the findings which have been reported.

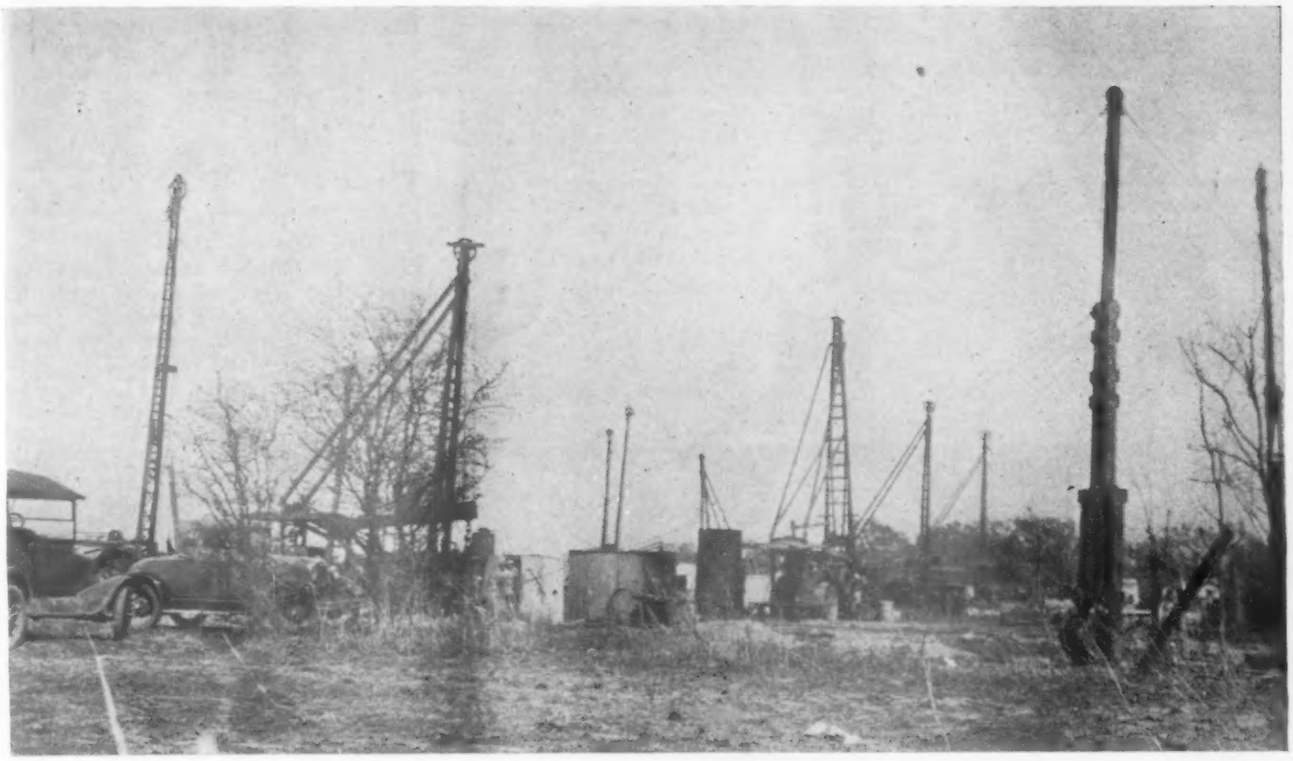
At no time during our mixed gas investigation has any effort been made to confine any part of it to the solution of purely local problems. From the beginning, it was felt that the limits of such studies should be national in their scope. The continuance of such a policy will result in securing fundamental data that can be applied by any company in the country interested in the production and distribution of city gas regardless of its location.

Scientific Research

With the added complexity of our modern living conditions naturally comes an increase in the number of business problems. This is particularly true in mechanical fields of every nature. The radio, telephone, automobile, and the large number of mechanical household devices now in use have created an absolute necessity for greater development and education along scientific lines. To the application of some branch of the engineering profession can be attributed almost every notable achievement in building, transportation, and communication, or, in fact, almost every major accomplishment made in improving our living conditions since the beginning of the history of mankind. Added to former fields of engineering, we now have sales engineers, heating and ventilating engineers, automotive engineers, gas engineers and many other kinds of technically trained men. This situation indicates that the engineering profession is extending its influence into almost every phase of human endeavor. With this expansion logically comes the added necessity for additional research work, for research is the foundation of all engineering knowledge.

Practically every successful industry is now spending vast sums of money in scientific research. It is estimated that, during the year of 1928, approximately $200,000,000 will be expended for such purposes. It is reported that

(Continued on page 37)



Looking down the center of "Little Seminole" pool.

"Little Seminole" Needs No Umpire; Ringmaster Would Be Handy

By WALLACE DAVIS
Staff Representative

OKLAHOMA'S newest oil field needs no proration committee to iron out its troubles, but a couple of oversized Irish traffic cops would come in handy and could fit in with first class appropriateness. No reflection on the law that does prevail there—its perfect thus far, even to the unpleasantness to the producers in the field. Muskogee's "law and order" have almost paved a trail between the town and field just carrying notices of injunction, restraining orders and subpoenas back and forth.

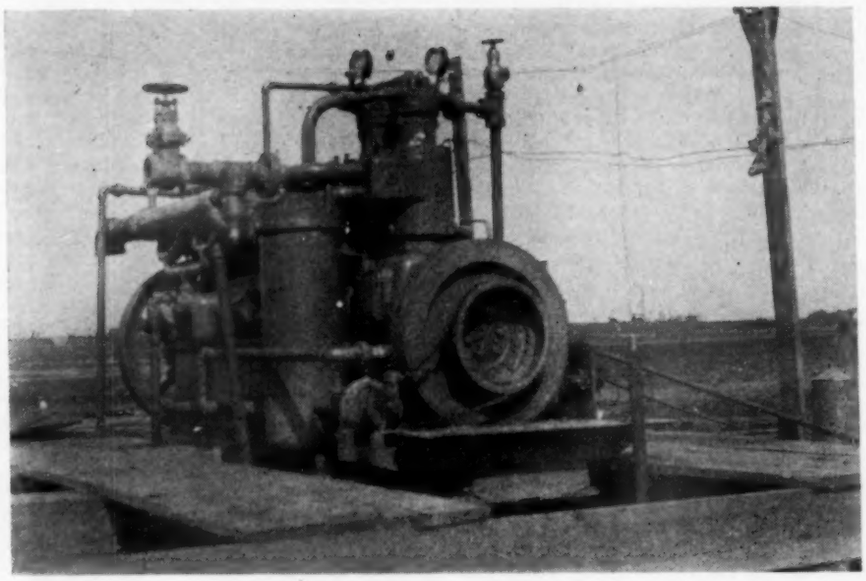
"Little Seminole" is credited with having hung up a new record for booms, Smackover, Ranger, Greater Seminole, Goose Creek or Gander's Slough notwithstanding; that is, considering its comparative size. While the entire area of development is "strung out" for considerable distance, touching parts of the northeast of the southwest and of the northwest of the southeast of Section 6-14-19, Muskogee County, the real hot spot of sub-division lot drilling, and which incidentally includes practically all of the oil activity in proven area, is confined to less than five acres. And within this limit there were 17 producing wells, including those temporarily shut down by order of the law and otherwise, and seven locations drilling April 15. Besides other development along the vein from which production is obtained there were 19 wildcats drilling within a radius of two miles of the field. Furthermore, there was no evidence of a near future lull in the unprecedented lease campaign in progress there, and it's a safe guess to say things will become even hotter.

A brief history of "Little Seminole" might be pertinent at this point. First, its discovery was almost accidental, and incidentally contributed some valuable knowledge to the production situation in general in Oklahoma. The oil is coming from a sand that has been passed up for 25 years, repeatedly ignored by the best of shallow formation operators.

The Bad Hole Sand

Dr. F. L. Walton of Muskogee, now associated with the Hale-Ford Oil Company, started a wildcat, Thorn 1, about four miles southeast of Muskogee to test the Timber Ridge sand commonly found at approximately 900 feet. It was so barren of production that a heavy shot failed to offer encouragement. The operators then plugged back to the Muskogee sand at 825 feet, which was also shot dry. Then a sand at 650 feet, known as the "Bad Hole" sand because of drilling trouble usually had at that particular depth, was tested and found dry. Their aim was to get oil or exhaust every effort in the attempt, and a test of the 525-foot sand came as a last resort. It was shot, and made a 25-barrel well. It is interesting to note this well is still good for its initial amount after completion December 13, 1927. As in most previous cases this sand, now known as the Hale sand, showed a rainbow of oil which developed about a two-gallon seepage on standing over night. Few producers in the pool have showed better signs, and a show which will seep its two gallons over night is considered a good well in the making. A shot is given every well, the size ranging from 40 to 100 quarts; or just as big a shell as the hole will take.

The discovery well production is from 523-47 feet, and the average top of the sand in the field is slightly shal-



More details on "Little Seminole." Top: An air-lift outfit that causes all other wells than the one on which it is installed to quit when it is in operation. Center: "Little Seminole" extension well responding to a 60-quart shot. Bottom: Discovery well which is still making its initial output, 25 barrels, and Lawrence Crain, president of the Hale-Ford Oil Company.

lower than this. The thickness of the sand body runs from 15 to 25 feet.

After the Lot Sale

The discovery location is near the southeast bank of Cootie Creek. Three additional wells were drilled near the discovery, but operating in this particular area was logically outlined, the acreage being controlled in sizeable blocks of 20, 40 and 80 acres.

"Little Seminole" came in with a bang, just as it has been going every since, when an extension was made about 200 yards across the creek, toward Muskogee. J. L. Blackwood, now president of the recently organized Ark-Add Oil & Gas Company, brought in the extension that resulted in lot and half-lot drilling. The Arkansas Addition dates back about 25 years when a sub-division was blocked out and offered for sale. Real estate enthusiasm at the time waned, and the subdivision was not a success from the retail standpoint. The result was that unsold lots, with many resales, were taken over by an Arkansas company. Prior to drilling J. L. Blackwood obtained a lease on a solid block of a large number of these lots. After his test was started old lot owners, long forgotten, began appearing on the scene with individual lots for lease. The operators first test was a success, and so to compete with numerous operators who succeeded in getting offset lot leases he started dividing his solid block and sub-leasing them to individual operators, giving two half lots for the drilling of a well, but retaining a half interest in the well. As a result of this sub-leasing the Ark-Add Oil & Gas Company owns an interest in 13 wells, 11 of which were drilled by other operators. The lots are 135 feet long and 25 feet wide, giving a block of 25x62½ feet for each location; that is, provided the block owner desires only one well on his space.

It is Fine Oil

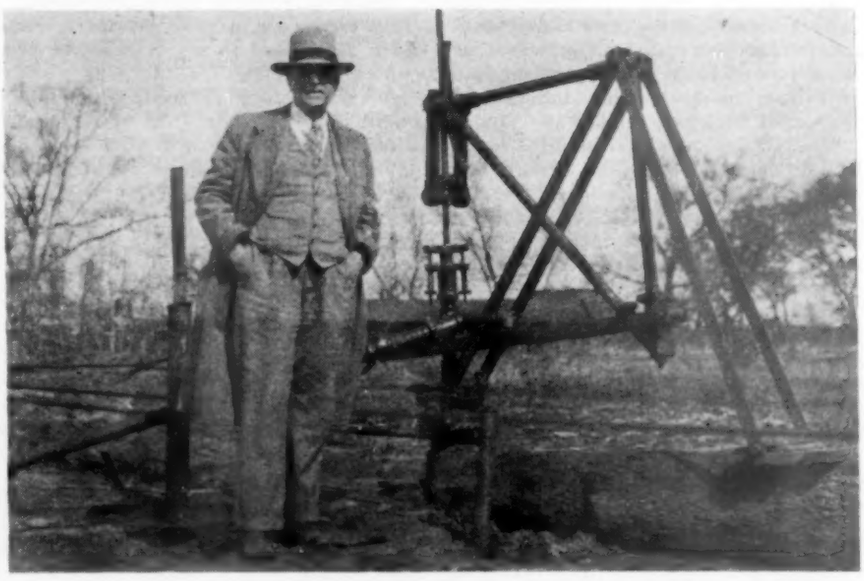
"Little Seminole" pool is not to be taken too lightly. It would put the great field from whence it took its name to shame in some instances. The Hale Sand is yielding one of the best grades of oil found in the Mid-Continent. It is 44 gravity, and has a gasoline content of approximately 44 per cent. The remaining crude is of a fine lubricating grade and has no water or b. s. Some water is produced from the holes, but comes from surface water sand, and presents no treating trouble. The crude is a bright red, resembling bright stock, finished lubricating oil.

Another asset for the pool: A well drilling under ordinary working conditions can be completed in less than 72 hours, and the average drilling time is little more than this. The cost of completing a producer runs roughly $2150, while a dry hole can be drilled to the Hale Sand for less than $1100.

While the average initial yield of "Little Seminole" wells is around 25 barrels, several producers have topped 100 barrels at the start and one 450 barrel producer is credited to the pool, There are now no flowing wells in the pool, the pump and swab, when swabbing is permitted, being used for recovery. The record well of the field flowed 23 days naturally from 505-22 feet. It is Decius & Garrett's Townsite 1, on lot 3, Block 16, in the southeast of the northeast of the southwest of Section 6-14-19, the second well in the townsite.

Needs a Ring Master

Production from the entire field for the week ending April 14 was a daily average of 349 barrels. Sinclair Pipe



Line Company is taking all of the oil, using a combination two and three-inch "trunk" line from the field to its topping plant six miles away, on the other side of Muskogee. From this plant, after gasoline is taken off, the crude is moved to Coffeyville for further refining. Sinclair has an 800-barrel storage tank on the ground to take care of any possible flush oil, but thus far has handled the production through its line.

A man with a fair voice could stand in the center of "Little Seminole" and give orders to every driller in the field. The old story of drillers swapping tobacco without leaving their respective jobs, was originated at Spindle Top years ago, could almost apply in truth rather than fable to this little field. If offsets continue to get closer one driller might handle two strings at the same time.

Stop Him, Sheriff

As has been mentioned before, the outstanding complication in the field is the legal side. N. B. Ragland, started the ball rolling when he introduced a new system of "lift" in "Little Seminole" for experimental purposes. He contracted to flow a well with air pressure, and increased the output from 20 to 400 barrels, but offset locations stopped producing. Neighbor lease holders got a restraining order against use of the "lift" and Ragland was forced to temporarily shut down. He then bought a lease, drilled his own well and connected with air pressure. Offset production again ceased and a second injunction was issued against its use. Following this action an offset owner started swabbing his well and stopped production in the Ragland well. An injunction against the use of the swab then followed, and now every time production in one well is temporarily killed the court is called upon to settle the argument.

But with these disagreements "Little Seminole" is a neighborly place to operate, and no conflicts have been serious. An example of the co-operative spirit existing in the field is had with two lease owners who found they had a lease suddenly expiring and had no machine to spud a location. The expiration came at midnight, and when at 10 o'clock in the evening they had been unable to secure a machine, a competitor, who was down about 200 feet, pulled up his string, moved his machine over on their tract and spudded their hole in time to save the lease.

The representative hole drilled at "Little Seminole" is started with an eight-inch bit. Eight inch pipe is used for surface casing, and is commonly set to around 80 feet. The only other string is six-inch, set on top of the sand, and it is not set until the sand is reached and figured to be productive. If the hole proves dry when sand is reached, the eight-inch is pulled and the hole plugged with no expense except time, labor and fuel.

The Trusty Fordson

Swabbing in the field is done almost altogether with Fordson tractors. Several pumping methods are in style there, but present indications are that the central power and shackle line will soon predominate; a central power is now being installed, which will be on the public service order, selling power to the operators. Some operators have small gasoline motors for power, and are running their well with a belt driven shaft. In one case a clean out machine was used to pump the well, a cable hook-up over the mast pulley being connected with the rod string.

This so-called "grass root" field has attracted wide attention from operators over the country. On its townlot of five acres are operators from Denver, Colorado, Marion County, Kansas; Coleman County of Central-West Texas, the Texas Panhandle, and Tulsa, Oklahoma City, and Seminole operators.

The gaming spirit not unlike that of famous gold rushes prevails in "Little Seminole." When the boom was just getting under way it was a common scene to see men and women rushing around looking for a chance to buy a thirty-second interest in a prospective well. The interesting part is that they got it too, and now there are wells good for less than 30 barrels daily which have as many owners. Royalty under most of the lots is split enough ways to entail a good system of bookkeeping.

There are two concerns composed entirely of women operating there. Mrs. Elizabeth Mills of Muskogee, was due to get a well about April 18 on lot 9, Block 16, in the center of the southeast of the northeast of the southwest of Section 6. Her well in the midst of the drilling flurry, had the Hale sand at 514 feet April 17, and was drilling in. There is one company headed by Mrs. D. G. Heflin and Mrs. Will Shaffer of Muskogee in which approximately 20 women are interested. The only man involved is the driller. Their operation is a wildcat drilling on a 12-lot tract in the Jacobs Addition, about one-half mile northwest of the field, and located in the southeast corner of Section 36-15-18.

Betty June Blackwood, seven-year-old daughter of J. L. Blackwood, president of the Ark-Add Oil & Gas Company and opener of the extension on the sub-division, was willing to stake her savings on "Little Seminole," and when her father started the wildcat 600 feet west of discovery production she ransacked her dime bank of five dollars and invested it. The well made 60 barrels, and Betty June meets the Ark-Add president at the front gate every evening to collect her dividend, based on the well's gauge for that day.

San Francisco.—The Shell Company is preparing to drill a second well in the Half Moon Bay district, a short distance south of this city. The first well was drilled to 5900 feet and probably will be abandoned. The second well will be located on section 8-6-5.

Laboratory Aid in Improving Use of Natural Gas

(Continued from page 34)

the American Telephone and Telegraph Company, alone, made expenditures of over $15,000,000 last year for such purposes. In fact, we learn that this organization expended approximately $1,000,000 in merely demonstrating television. The continued growth of such establishments as the General Electric Company's laboratories in Schenectady and Cleveland are hopeful signs and indicate the essential value of institutions of this kind to the electrical industry. These are only two examples of many other similar activities. Undoubtedly, our own testing organization will eventually find its greatest usefulness in the field of scientific research.

In conclusion, our testing laboratory has improved the safety, efficiency, and durability of over 7000 different kinds of gas ranges, water heaters, space heaters, furnaces and boilers. This represents an elevation in the standards of performance and construction of over 60 per cent. of the common types of gas appliances that will be sold during the year of 1928. Furthermore, this information has been available for the use of any of our members or appliance dealers interested in the sale of better gas equipment for use in the modern home.

Other important accomplishments are the assistance that has been given cities interested in the application of gas ordinances and the research work which has been conducted for the solution of some of our mixed gas problems. All in all, the laboratory has led the way to safer and more satisfactory utilization of manufactured and natural gas.

A careful study of the gas industry's history will indicate that the establishment of the testing laboratory is one of its most hopeful signs of progress. Further, it is positive proof that gas men generally are keenly awake to the possibilities for making our product of the greatest possible service to the American people. One need not be particularly visionary, however, in looking into the future to realize also that we have made but a mere beginning. The laboratory's field of usefulness will be expanded and it will push on to far greater achievements, for it was founded for the accomplishment of one of the most essential purposes —that of creating and maintaining greater public confidence and good will.

Tulsa.—The Big 12 Oil Company is getting 49.8 gravity crude from a well drilled in the southeast of the southwest of section 27-1s-8w, Stephens County, Oklahoma. This fine pay was found at 1400 feet, depth of gas formerly produced in this area by Empire Gas & Fuel Company. Oil production in the same area has heretofore been produced from the 1600 foot sand.

PERSONAL MENTION-MEN YOU KNOW

John J. O'Brien, president of Standard Gas and Electric Company, H. M. Byllesby and Company, Northern States Power Company, Oklahoma Gas and Electric Company, Shaffer Oil and Refining Company, and other large public utility companies, together with other prominent officials, who are making an extended tour of inspection of the Oklahoma properties of the company, were the guests last Monday of John L. Gray, executive vice-president of Shaffer Oil and Refining Company at Tulsa. The officials accompanying Mr. O'Brien are J. F. Owens, vice-president and general manager of Oklahoma Gas and Electric Company; Judge Robert M. Raney and Streeter Flynn, prominent attorneys of the southwest.

Fred W. Robertson, purchasing agent for the Skelly Oil Company, has returned from a trip to the properties of the company in the Texas Panhandle.

Robert Armitage, of the sales department of the Smith Separator Company, Tulsa, and T. A. Laney, research engineer of the Fisher Governor Company, of Marshalltown, Iowa, have returned from Norman, Oklahoma, where they attended the southwestern meter conferences.

Daniel J. Danker, representing a group of Boston stockholders of the Midwest Refining Company and its affiliations, made his regular spring visit to Casper and the Salt Creek field this week.

W. W. Wilson, known to oil men in the Rocky Mountain region as the parent of the Hiawatha structure in Southwestern Wyoming and Northwestern Colorado, died at a hospital in Rock Springs, Wyoming on April 28. He has been a pioneer ranchman, frontiersman, prospector, and oil scout. His friends knew him as "Wiff," and one of the Hiawatha structures is known as "Wiff Wilson Dome."

W. C. Trout, vice-president and general manager of the Lufkin Foundry and Machine Company, is on special business in connection with sale of the company's products in St. Louis, Chicago and other points in the North.

Djevad Eyoub, geologist of the Empire Oil & Gas Company, has been transferred from Laredo, Texas, to the company's headquarters at Tampico, Mexico. His new address is Apartado 1388 at Tampico.

Old Timers With Prairie Get Service Pins

The accompanying photograph represents the gathering of Prairie Oil & Gas Company and Prairie Pipe Line Company employes at the home office in Independence, Kansas, April 13, who have been in the continued service of the concern for 20 or more years. Those meeting such a service requirement have been made members of Prairie's "Jewel Men," and are wearers of jeweled pins signifying the period of years their service extends in the past.

Following decision to honor these long-time employes a gathering was called to be held at the home office April 13, and eligible employes were brought to Independence at the company's expense, given a banquet and presented their pins by W. S. Fitzpatrick, chairman of the board of directors.

Included in the group is the company's president and several other officers, several pumpers, clerks, a driller, several gaugers, district and field foremen, superintendents, roustabouts, an attorney, a purchasing agent, an iron worker and one man who has retired from service. Thus, position had no bearing on the honor given, but service, in time, with the company. The numbers after names in the picture represent the number of years service the man has.

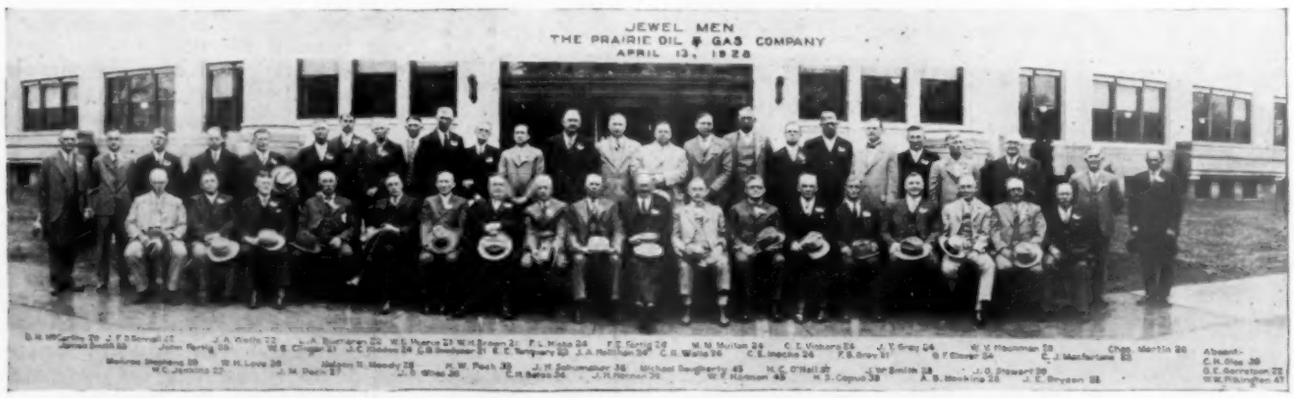
Fred W. Dallas of Houston, drilling and production superintendent of the Rycade Oil Corporation, was called home from a field trip May 7 when the youngest of his four sons, Bert, age three was run over and instantly killed by a street car near the Dallas home.

J. R. Donaldson of Dallas, contracting engineer of the Chicago Bridge & Iron Works, spent several days in Houston last week.

Frank Morris Smith, petroleum geologist and consultant of Los Angeles, died as a result of injuries sustained in a motor accident at Rawal Pindi, Punjab, India, on the night of April 1. He was formerly connected with the California State Bureau of Mines, the Union Oil Company, the Pan-American Petroleum Company, and at the time of his death was on a professional visit to India and Burma on behalf of the various oil companies managed by Messrs. Steel Brothers & Company, Ltd., of 6 Fenchurch Avenue, London, and was to return to Los Angeles on July 1. Being an ex-service man, Mr. Smith was given a very impressive military funeral, which was attended by all the American and European staff of the Attock Oil Company, Limited. The body was interred in the European Station Cemetery in Rawal Pindi. Mr. Smith is survived by his wife, who was on a visit to her old home in Birmingham, England. Condolences and sympathy of the American and European staff, of himself and his company are offered to Mr. Smith's widow and friends by J. B. Meherin, field manager of the Attock Oil Company, in a letter to this publication giving an account of the death.

Joe McGinnity has joined the American Steel Wire Company as special representative in the Mid-Continent. Mr. McGinnity formerly was with the Oklahoma Iron Works.

Bob Bradshaw and Roy McKeever, of the International Supply Company, made a recent trip through the Kansas oil fields.



Hendrick Shut-In Program Lessens Water Danger

Yates field has well which made 3000 barrels of oil in 50 minutes and threatens new record; wildcat nine miles from Hendrick pool has show

By H. H. KING
Staff Representative

SAN ANGELO, Texas—The high mark on daily production in the Hendrick field has been made for all times, if the proration order of the Texas Railroad Commission sticks, and the operators are now concentrating their efforts towards getting as many additional 40-acre units on production as possible to maintain, or increase their allowable production. The field is credited with having averaged 252,965 barrels daily during the past week, and had increased to about 321,000 barrels on the day previous to the enforcement of the commission's order that limits production during the first half of May to 150,000 barrels daily.

Marland Production Company scored two big wells on its 60-acre lease on the north end of the field, offsetting Cranfill & Reynolds' prolific 20-acre tract in section 33. Marland's Hendrick 1 is rated good for 8000 barrels daily at 2760 feet, but has been pinched to about one barrel per hour, with more restrictions necessary to meet its allowable production. Hendrick 3 came in just in time to qualify the lease with production during the first period of proration, and gauged 370 barrels pipe line oil during the first hour with a total depth of 2759 feet. Marland is allowed to produce only 1335 barrels daily from these two wells during the first half of May, and Humble is running the oil for purchase.

The spread of water in the north end of the field failed to gain headway before the enforcement of proration, although Cranfill & Reynolds' Hendrick 2 "C," which was reported last week making 6 per cent water while restricted to 5000 barrels production daily, threatened the area with water. This well was shut in for a few days, and when opened to about 2000 barrels daily water practically disappeared.

The water danger in this prolific section of the field is now greatly reduced with all wells pinched. Independent's Cowden-McCabe 1, section 36, widened the field to the east with an initial flow of 305 barrels of oil during first 12 hours after shot of 670 quarts at 2645 to 3041 feet, and on the following day made 400 barrels with cavings in the hole.

Pure Oil Company's Grisham-Hunter 1 "C," located in the northwest corner of the southeast quarter of section 45, block 26, is credited with having gauged 1054 barrels during the first hour gauge from nine feet of lime at a total depth of 2701 feet, but had to pinch to a small fraction of the potential flow for lack of facilities.

The Yates field also contributed a heavy producer during the past week when the California Company's Yates 15 put 2648 barrels of oil into tanks via one six-inch line during the first 50 minutes, and about 500 barrels of additional oil was spilled in the fire dyke because of the tanks running over. This well just topped the big pay at 1125 feet, and is to be given another one hour open flow later in week, with prospects of setting up a new record for the field.

The production trend generally credited with taking a northwest course from the Hendrick field broke into the spotlight again this past week when Gibson-Johnson et al's wildcat test on the Lum Daugherty land, located near the center of the southwest quarter of section 3, block 74, Winkler County, cored a good show of oil and gas at 3159-64 feet, with a total depth of 3167 feet. This wildcat is about nine miles from the Hendrick field, and mudded off a heavy flow of dry gas at 3070 feet.

Across the Winkler County line from the above wildcat test and in Lea County, New Mexico, Marland Production Company and the California Company's wildcat on the Eaves' government permit was credited with making about 40 million cubic feet of wet gas and a light spray of oil at 2920 feet. This wildcat is located in section 19-26s-37e, and three miles southwest of a 20,000,000 foot gasser and 100 barrel oil well belonging to the Texas Production Company. Marland et al's Eaves 1 encountered the top of the big lime at 2620 feet, with a surface elevation of 2960 feet, and is being watched closely. The owners plan to mud off the gas and drill deeper. The California Company purchased a one-quarter working interest in this well and block and a total of 426,000 acres of government permit lands from Marland several months ago, and it is understood that the Pasotex Pipe Line Company, subsidiary of Standard of California, will be available for a pipe line connection in the event an oil well is found on the Eaves tract. The Pasotex line is now well underway from the Hendrick field to a refinery at El Paso.

Deep Rock Oil Company's wildcat test

HENDRICK FIELD OPERATIONS

The status of operations in the Hendrick field, Winkler County, Texas, at the close of last week is shown below by companies:

Company	Locations and Rigs	Drilling Tests	Tests in Big Lime	Completed Wells	Initial Produc'n	Daily Average Produc'n
Amerada Petroleum Corp.	..	..	1	..	.....	.....
Arizona Mining & Eng. Co.	..	1	..	..	.....	.....
Atlantic Oil Prod. Co.	2	5	1	15	63,030	*24,595
Atlantic & Collett-O'Keefe	2	2	1	3	27,000	*21,850
V. T. Bolin & Company et al	..	1	..	..	.....	.....
The California Company	..	..	2	6	6,900	5,100
Cranfill & Reynolds	1	1	..	5	41,825	*20,515
Eastland Oil Company	..	..	1	..	.....	.....
Gulf Production Company	6	3	3	10	38,795	*18,775
Humble Oil & Refining Co.	3	10	2	15	59,220	*42,000
Independent Oil & Gas Co.	..	1	3	15	61,220	13,460
Landreth Prod. & Roxana	3	6	3	6	26,925	10,755
Magnolia Petroleum Co.	..	..	3	5	11,790	2,595
Marland Prod. Company	2	3	1	1	8,000	*.....
Murchison & Cranfill Bros.	3	..	2	5	6,675	875
Prairie Oil & Gas Co.	1	1	..	..	.....	.....
Pure Oil Company	3	3	10	9	38,895	*7,030
Republic Production Co.	2	4	3	3	15,700	10,750
Roxana Petroleum Corp.	1	4	5	16	85,530	*34,935
Sheldon-Burden et al	..	..	1	..	.....	.....
Skelly Oil Company	5	1	..	..	.....	.....
Southern Crude-Dixie Oil	2	..	7	15	35,565	*20,260
Southern & R. A. Westbrook	13	5	11	14	25,150	*12,375
Texon Oil & Land Co.	1	1	2	4	16,175	7,095
Winkler Oil Producing Corp.	..	1	..	..	.....	.....
Totals	50	53	62	147	564,255	252,965
Totals previous week	50	52	64	135	512,895	216,630

*Production partially pinched.

on the W. J. Harris land, located at the center of the southeast one-quarter of Section 12, Block 2-46, P. S. L. survey, Andrews County, encountered a light flow of gas at 2941 feet late last week, and lodged the tools. This is the second wildcat test drilled in the county to encounter gas above the lime. In Runnels County, Robert Watchorn et al of Oklahoma City encountered a two million foot flow of gas with a slight show of oil in sandy-lime at 3475-85 feet in drilling a wildcat test on the J. L. King tract, G. W. Dyer survey. Total depth of this test is 3501 feet.

The rig burned Monday on the Texon Oil & Land Company's University 1-B, Group 1, deep test in the heart of the Big Lake field, Reagan County, while drilling at 8220 feet. This well is carrying several thousand feet of oil in hole from upper pay around the 6200-foot level, and has established a world's record on total depth.

Properties of American Refining Company Sold

Wichita Falls, Texas—Properties of the American Refining Company, which has been in receivership since August 22, 1927, were sold at public auction here May 5 for a cash consideration of $2,250,000 to the creditors' committee. The final consummation of the deal rests on the approval of the federal court, which is to act May 18. The creditors' committee is composed of Frank Kell, Wichita Falls capitalist and former stockholder in the company; F. W. Catterall, banker, Galveston; F. F. Florence, banker, Dallas; J. C. Doheny, Kansas City, Mo.; and L. G. Hawkins, Vernon.

The American Refining Company is now operating as a complete unit of producing, refining, pipe line carrier and marketing of refined products, with the following receivers: John W. Hooser, Dallas, banker and oil operator; E. H. Eddleman, Wichita Falls, oil official; and J. T. Mytinger, Wichita Falls.

In the event the sale to the creditors' committee is approved by the federal court the new owners will reorganize the company and continue active operations in all branches of the industry.

Standard of California Re-elects Officers

San Francisco.—At the regular meeting of stockholders of the Standard Oil Company of California on May 3 the old board of directors was re-elected; and at a meeting of the board of directors following the annual meeting, officers were re-elected as follows: K. R. Kingsbury, president, R. J. Hanna, H. M. Storey, H. T. Harper, and W. H. Berg, vice-presidents, and R. C. Warner, treasurer. The other directors of the company are H. D. Collier, R. W. Hanna, Oscar Sutro and M. E. Lombardi.

Production Rush Precedes Hendrick Proration Enforcement

(Continued from page 27)

is taking steps to run and purchase outside oil from producers not served by private lines, or desirous of erecting more fluid storage to accommodate the earned production. Humble has given a connection to Marland Production Company, which drilled in two big wells during the past week without having tankage or a private line. Only one of Marland's wells were completed in time to get in on the first proration period.

New locations were made in large numbers during the past week in the Hendrick field by operators seeking to put more units and wells into production, thereby increasing their allowable output. No restrictions are placed on such drilling by the commission, but the total daily output of the field is to be limited to the figure set by the State auhorities. This proration plan is to remain in effect for six months, but in all probabilities the commission will be asked by operators to permit a higher daily production in the near future, since more production can be conveniently marketed with facilities now in operation and building.

REPUBLIC KICKS OVER

Fort Worth, Texas, May 8—Republic Production Company is reported to have taken exception to the allowable production granted its leases in the Hendrick field under the Texas Railroad Commission's proration plan and is flowing its four completed wells practically wide open. This concern was allowed a daily flow of 5403 barrels during the first period, and is reported to be producing double its quota.

The restriction of the daily output of the Hendrick field to 150,000 barrels daily automatically eliminates bargain priced oil, and will greatly cut down tank car shipments from remotely located tank car racks. Roxana Petroleum Corporation, which has been one of the largest shippers of crude from West Texas in tank cars, has almost eliminated shipments, owing to having a 1,000,000 barrel concrete reservoir at Monahans to pump oil into at the rate of 30,000 barrels daily, with a similar reservoir well underway at McCamey, and a 10-inch pipe line outlet from the district scheduled for completion in June.

Hendrick field producers with crude contracts outstanding, and the Southern interests will continue to make use of tank cars in marketing the oil. Southern is entirely dependent upon tank cars and local storage for the disposal of all oil produced, but may make other arrangements shortly.

Dana H. Kelsey, vice president and general manager of Prairie Oil & Gas Company, Independence, Kansas, spent the early part of this week in Tulsa on business.

Problems of the Natural Gas Industry in California

(Continued from page 32)

had passed, the utilities cast about for other industrial business. A water shortage for the development of hydro-electric energy occurred in 1924. The result was a maximum operation of standby electric steam generating plants during the last seven months of the year, utilizing about 62,500,000 cubic feet a day.

An intensive campaign for the sale of gas for industrial uses developed an outlet for large volumes of surplus natural gas. This meant disposing of a commodity, the production of which we could not control. A supply was available as it was produced, but a continuous supply could not be guaranteed. Under these conditions surplus industrial natural gas service could not command a high rate, but had to be sold at rates as low as 15 cents a thousand cubic feet. Gas sold at the lowest rate was subject to the first shut-off. In securing this industrial business the chief competition to be overcome was fuel oil and at times when large quantities of dry casing-head was available, there was necessarily a large quantity of crude oil and a resultant large production of fuel oil. It will be interesting to note the fluctuation in fuel oil prices over the past years, having in mind that these prices regulate, in a measure, the price at which natural gas must be sold in competition with fuel oil.

Fuel Oil Price Quotations
Standard Oil Company of California, f. o. b. El Segundo

Price Changes	Price per barrel (42 U. S. Gallons)
December 29, 1915	$0.80
February 18, 1916	0.90
July 7, 1916	0.95
July 20, 1916	1.00
September 20, 1916	1.05
November 21, 1916	1.10
December 2, 1916	1.15
January 19, 1917	1.20
May 11, 1917	1.30
June 7, 1917	1.35
July 2, 1917	1.45
May 1, 1918	1.60
March 17, 1920	1.85
July 13, 1920	2.00
May 13, 1921	1.75
July 30, 1921	1.50
July 15, 1922	1.25
August 8, 1922	1.00
January 22, 1924	1.25
February 5, 1924	1.40
February 4, 1925	1.60
May 16, 1925	1.50
August 29, 1925	1.20
October 27, 1925	1.00

Industrial sales have been extended until at the present time practically all classes of service requiring the generation of heat and the operation of internal cumbustion engines are connected to natural gas lines. Included among gas company customers are ceramic industries, including glass plants, steam generating plants, ce-

ment, lime, and plaster mills, bakeries, fruit and vegetable canneries, paper products manufacturers, steel treating furnaces doing pre-heating, annealing and carbonizing, melting furnaces for non-ferrous metals, rotary driers for drying of building materials, such as rock and sand, meat packing houses, rubber products manufacturers, newspaper plants, dairies, metal enameling works, can manufacturers, paint and varnish manufacturers and many others, including all applications of heat treating steam agitation, evaporation, baking, extraction, drying and distilling.

Natural gas fuel at very reasonable rates has been a very substantial contributing factor to the industrial development of Southern California. The magnitude of the natural gas industry is indicated by the accompanying table, which shows the natural gas produced and the volumes handled by the utilities in the various districts.

Conducting Safety School At Seminole

Seminole, Okla.—A program of safety training has been started by the Bureau of Mines in the five fields of Greater Seminole, which, when completed, will have given every man in the fields an excellent opportunity to learn first aid work first hand. The work is being boosted by the safety division of the Mid-Continent Oil & Gas Association, which estimates that there are approximately 5000 men employed in these five fields. Every employe is invited to attend the classes, and while some companies heavily interested in the area are only advising their employes to take the training, other concerns are making it compulsory.

Plans of the safety department of the bureau are to continue the course until every section of the Seminole territory has been thoroughly covered, and it has been estimated that a period of three months will be required to carry out the program. Thorough training will be given by able men in the regular first aid training, including the handling of the injured man, resuscitation, stopping of bleeding, fractures and sprains, treatment for burns and other phases of treatment.

The safety work is being sponsored by the most progressive companies with holdings in the Seminole fields. K. L. Marshall of the bureau is in charge of the work, and is aided by three trainers: P. E. Keegan, J. B. Hynal and J. J. Jefferies. The Bureau of Mines safety car No. 6 was sidetracked late in April at Indian Territory Illuminating Oil Company's warehouse on the Goforth lease, to begin the work.

Don Wallace, safety director for Mid-Continent Oil & Gas Association, is making an effort to aid the bureau in getting the attendance of Seminole field men interested in the course, 100 per cent.

Unit Operation Successful in Coleman County, Texas

Coleman, Texas—Development of a 2000-acre block of leases in central Coleman County on a unit plan basis by three major companies and two independents was given a good start towards success early this week when the first test drilled registered an initial flow of 30 barrels of high gravity oil per hour from sand at 1505 feet. This producer is a semi-wildcat, and is located on the M. Tye Overall ranch, section 66, R. H. Overall survey, about three miles southeast of Valera.

The consolidation of leases for the Overall unit plan was perfected more than a month ago. One small oil producer and two completed gas wells had been drilled by the various contributors of acreage before the plan went into effect, and these were turned over to the unit owners. The Continental Oil Company, Wichita Falls, is the largest owner of interest in the unit plan, and the Anzac Oil Company ranks second. The drilling and operation of the completed wells is being done by the Continental Oil Company, but each member of the unit plan has one representative on a general board that decides the location of new tests, and the number to be drilled. The members of the unit plan, and the percentage of interest held is as follows: Continental Oil Company 36.50 per cent, Anzac Oil Company 24.33 per cent, Mid-West Exploration Company 18 per cent, M. G. Cheney et al 12.17 per cent, and Humble Oil & Refining Company 9 per cent.

M. G. Cheney is affiliated with the Anzac Oil Company, and has gained a reputation as being an authority on geological conditions in the Coleman County area, having made a number of successful strikes recently with wildcat tests conducted jointly with the Continental Oil Company.

Introduction of the unit plan on the Overall ranch is reported to have been fostered by Humble Oil & Refining Company, and a pipe line connection has been given the two producing oil wells by the Humble Pipe Line Company to run and purchase all oil. Crude in this area averages above 40 gravity, and is of a very good quality.

The first producer scored by the unit plan is known as Continental Oil Company et al's Overall 1-F, located in the east end of section 66, and the well was first completed as a six million cubic foot gasser at 1492-1503 feet, but when deepened to 1505 feet last week flowed 75 barrels of oil during the first 12-hour gauge. The flow increased to 30 barrels per hour early this week. Continental et al's Overall 1-C, which was showing for an oil well when the unit plan became effective, is credited with having flowed 40 barrels during a 12-hour gauge from a lower sand at 1613-21 feet, and is now rigging up to pump. This latter well is located on the west line of section 12, and nearly one mile southwest of the other oil producer. A west offset to the Overall 1-C is being started by the unit members.

Interest in this particular section of the Overall ranch was started last December when Manhattan Oil Company's Overall 1, located on the east line of section 14, drilled through sand lime at 2282-90 feet to a total depth of 2500 feet. It was not successfully completed as a 30-barrel pumper until February. Manhattan's Sealy-Smith 1, section 13, was showing oil and gas in top of pay at 2283 feet early this week.

The acreage thrown into the unit plan includes: the west one-half of section 11 and all of section 12, G. H. & H. Ry. survey, block 1; east 280-acres of the R. H. Overall survey No. 66; 163 acres in the southeast part of the J. H. Peoples survey No. 295; west 120 acres and the east 80 acres of the west 280-acre tract of the M. Tye Overall survey No. 9; and the south 400 acres and west 37 acres of the north 120 acres of the south 520 acres of the John H. Barkley survey No. 7.

E. J. Cunningham et al's wildcat test on the Jennings land, section 94, A. S. Lipscomb survey, located near the Brown County line and southeast of Santa Anna, was reported making four barrels of oil per hour on pump after being given a shot of 10 quarts in the Fry sand at 1172-77 feet. This oil tests about 37 gravity. Magnolia Petroleum Company holds a one-sixth over-riding royalty on this well and drilling block, having donated acreage. Cunningham and associates contracted to sink four tests to the 1250-foot horizon, and to start drilling on a new test within 90 days after completion of the last one until the specified number of tests have been drilled.

Lincoln Well Wet

Tulsa.—Morgan & Flynn's Smith 1, located in the southeast of the northeast of the northwest of Section 27-17-5, Lincoln County, about eight miles west of Cushing got a hole full of water at 4115-20 feet, which offers considerable limit to this area expected to show much promises heretofore.

Magnolia's Gillian 2, in the northeast of the southeast of the southwest of Section 8-14-4, Lincoln County, was drilling ahead April 30 at 5058 feet in Viola lime and swabbing 95 barrels daily. The location is just west of Chandler.

Prairie Shipments

Tulsa.—Prairie Pipe Line Company moved by pipe line and tank car a total of 4,901,433.44 barrels of crude during the month ending April 30, or a daily average of 163,381 barrels.

Sun Water Shipments

Beaumont, Texas.—Coastwise shipments of the Sun Oil Company from Sun during April amounted to 461,368 barrels.

Little River South Extension Shows Big Potential

Five of cooperatively drilled wildcat tests have average output of 3000 barrels daily; producers pinched in line with agreement

By WALLACE DAVIS
Staff Representative

TULSA.—Interest of Mid-Continent producers last week centered on development south of Little River field, where within a few days a semi-wildcat proposition was turned into a proven area of spotted production that has the ear-marks of great potential crude supply. Following completion in rapid fire order over the close of April and into May of several big wells in the area outlined for restricted drilling, Monday saw falling production again as the new wells reached their three-day test limit, and were pinched in to 100 barrels.

The situation in this hot spot Monday of this week, summed up, was this: Five of the 10 "permitted" test wells were completed as producers averaging around 3000 barrels initial, one was dry and abandoned, while four additional ones were due to reach pay shortly. Four of the five producers had been pinched in, with the fifth to be pinched Monday night. Three of the six offsets to the two original wildcat producers in 7-6 were in for production, with the other three nearing the pay. All three of the offset producers had taken the three-day test and were pinched in to 100 barrels.

The status of the four drilling test wells was as follows on May 7: Carter's Fish 1, in the northwest of the southwest of section 12-7-6, set six-inch casing at 4147 feet and was drilling in Viola lime at 4197 feet. Carter's Larney 1, in the northwest corner of section 24-7-6, was cleaning out after standardizing at 3994 feet. T. B. Slick's Williams 1, in the northeast of the southeast of the northeast of section 15-7-6, was drilling plugs after standardizing at 3860 feet. Roxana's Hotulka 1, in the northeast of the northwest of section 23-7-6, was drilling at 4200 feet in Viola topped at 4180 feet, and 8¼-inch casing was set at 4191 feet. All four of these remaining test wells were due to reach pay or prove dry within the coming week.

Carter's Wilson 1, north offset to Snowden & McSweeney's Tiger 1 wildcat discovery in the northwest corner of section 13, was drilling May 7 at 4188 feet in Viola lime topped at 4090 feet. Magnolia's Harjo 1, a west offset to Tiger 1, was standardizing at 3650 feet.

Production Down

Greater Seminole production took a nose dive over the past week-end after reaching 285,333 barrels with the May 5 gauge, slumping 7328 barrels in two days. Figures by fields for the three days were as follows:

Field—	May 5	May 6	Wells	May 7
Little River ...	45,748	43,761	118	44,720
Bowlegs	70,339	69,842	313	68,756
Earlsboro	99,799	100,378	287	95,875
Seminole City .	54,142	53,378	304	53,921
Searight	15,325	15,004	68	14,733
Totals	285,333	282,574	1,090	278,005

The output for the week ending May 5 represents an increase in daily average of 3076 barrels over that of the previous week at which time an average of less than 2000 barrels of Seminole oil went to storage. Thus the close margin between production and outside demand is seen for this crude at present.

Independent Oil & Gas Company's Harris 5, in the southeast of the northwest of section 23-7-6, was the fifth of the 10 test wells south of Little River to join the producing fold. It made 140 barrels the first hour late Friday, May 4, after topping Wilcox sand at 4290 and drilling in five feet. Viola lime here was topped at 4145 feet. It is the southernmost of the 10 test wells, and lies one-half mile, minus two locations, east of The Texas Company-Independent's Hotulke 1 which offsets the Harris discovery well in section 23. It's distance south of the locations to the west is approximately 300 yards.

Mid-Continent Petroleum Corporation's Bruner 1, a northwest offset to Snowden & McSweeney's Tiger 1, discovery well in section 13, thus located in the southeast corner of section 11, was making 4810 barrels when pinched in to 100 barrels daily May 4. It first flowed 75 barrels an hour after topping the Wilcox sand May 1 at 4350 and drilling four feet in pay. After deepening two feet production increased to more than 200 barrels an hour. Both this well and Snowden & McSweeney's Tiger 1 were pinched to the allowed yield May 3.

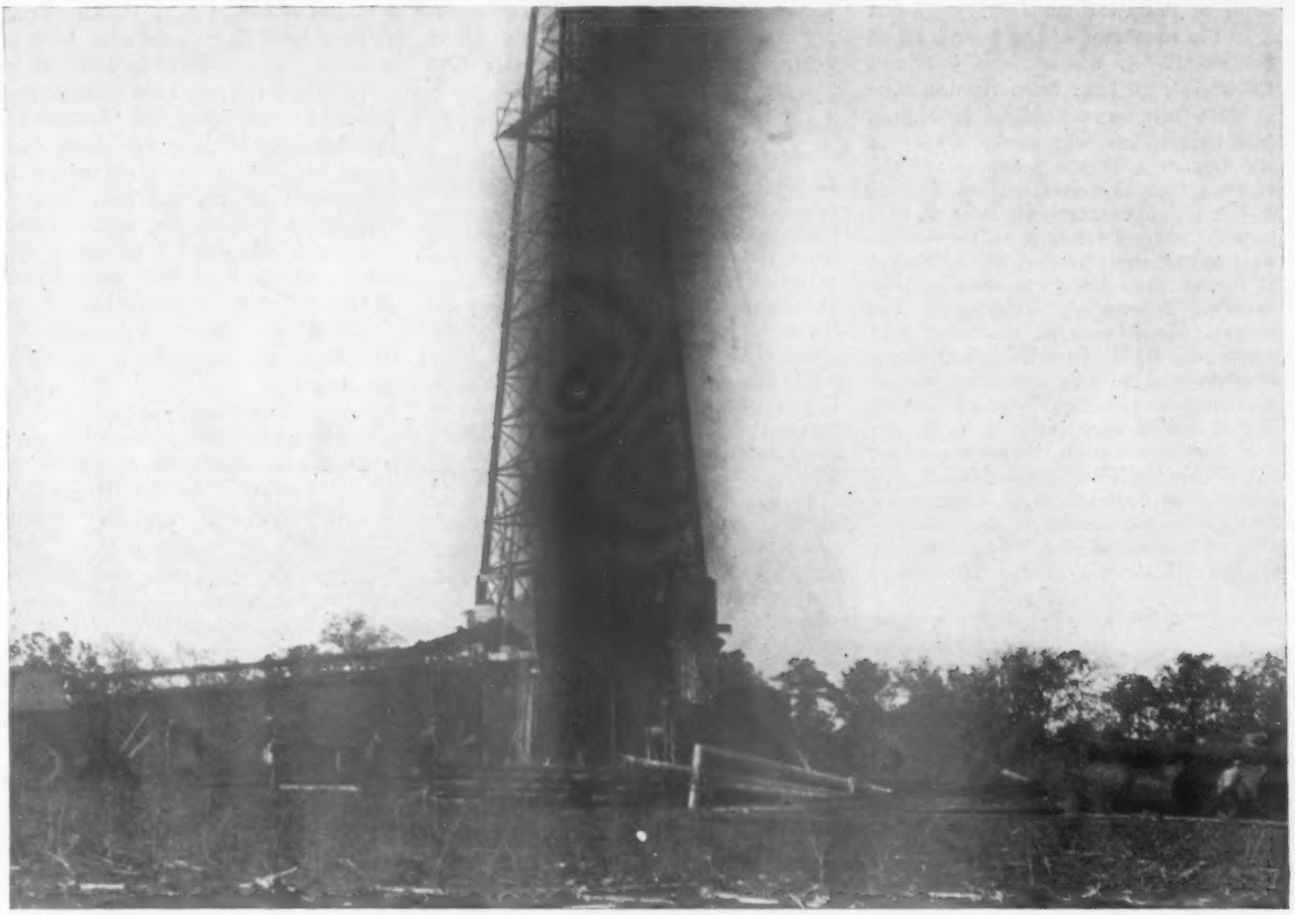
Sinclair Oil & Gas Company's Tewee 1, in the northeast of the southwest of the northeast of section 14-7-6, which was swabbing 90 barrels from Simpson sand at 4098 feet May 1, found Wilcox at 4125 feet May 2, and after drilling in five feet flowed 3300 barrels. It was pinched May 5 to the allotted yield. The Tewee 1 was the fourth of the 10 test wells to produce.

Earlsboro Completion

An outstanding feature in Greater Seminole last week, which served to distract attention temporarily even from the bustling development in the South Little River vicinity, was Superior Oil Corporation's completion of Walker 1 in the northeast edge of Earlsboro for an initial yield of 220 barrels per hour May 3. Wilcox sand was encountered at 4377 feet and penetrated to 4390 feet. A sensational increase was made in the output, and Saturday morning's gauge showed a yield of 7445 barrels. Location is in the southeast of the northeast of the northeast of Section 2-9-5. The great significance of this well lies in the fact that Earlsboro has generally been considered "out" as far as big new production is concerned, and it came as more of a surprise than did the Prairie's phenomenal producer on the Charlie Davis farm in Section 13-9-5 about three months ago. It means that Earlsboro cannot be listed as a has-been in the way of further flush oil, and that further development will later result on this prolific northeast end. Trouble was had with finishing job on Walker 1, and required a 15-quart shot from two fishing jobs for the swab. The Walker 1 gave Earlsboro its first new productive life in a big way for more than two months, and production at the close of the week in this field returned to near the 100,000 barrel level.

Skelly Oil Company et al's small wildcat discovery about midway between Earlsboro and Searight field, which furnished a probable link between these two pools two weeks ago by making commercial production from Hunton lime at 4246, unusually low, was flowing April 5, and gauging 103 barrels. Further development is expected to result from this well when better markets will warrant play for this size output. At least it gives more concrete evidence of the theory that oil in fair quantities lies almost solidly throughout the Seminole territory.

Another angle of new light thrown on the Little River field is the strength displayed in the area along the south edge of the field proper, and just north of the restricted area. Pure Oil Company's Harjo 1, in the northeast of the southwest of the northeast of 11-7-6, two locations south of Carter Oil Company's Jackson 1, which extended Little River several months ago, flowed 2970 barrels May 4 from 4200-18 feet



Reiter-Foster Oil Corporation's Bunyard 1, southeast northwest southwest Section 14-7-6, one of the 10 co-operatively drilled test wells south of Little River. It flowed 110 barrels an hour from Wilcox sand with one foot of pay topped at 4256 feet, 41.4 gravity corrected, April 28. Three days later it was pinched to 100 barrels daily to conform with the conservation move in effect in this area of restricted drilling and prorated production.

in Wilcox. This well, which offsets Carter's Jackson 2 on the south and Gypsy's Renton 1 on the southwest, proves the strength of this acreage lying midway between Little River pool proper and the new production on the south. At the latest report available for publication in the May 4 issue of *The Oil Weekly* the Harjo 1 was swabbing 430 barrels from 10 feet of pay topped at 4200 feet, but on the following day flowed 110 barrels an hour from 18 feet of pay sand. Wells in this immediate vicinity are having considerable bearing on the outcome of the shutdown program in Little River's new productive territory. Due to the fact that they are not included in the restricted territory, some operators went on record as being reluctant to pinch their wells because of drainage supposedly suffered from production to the north.

Allen Field

An outstanding well in Oklahoma is Mid-Continent Petroleum Corporation's Fleet 4, Allen field, in the northeast of the southeast of the southeast of Section 7-5-8, which gauged 220 barrels an hour from 2720-46 feet May 3, to hang up a production record for Allen field producers. It made an average well in this field from 2720-33 feet previously, and attained the big yield when deepened 14 feet more. Considerable significance is attached to the well due to the fact that deepening of other producers will probably result in the future. Eighty-one wells in the Allen field late last week were producing in excess of 16,000 barrels. Next in importance to Fleet 4 was Louisiana Oil & Refining Corporation's Punluste 3, in the northwest of the southwest of the southwest of Section 8-5-8, which flowed 1230 barrels from 2709-48 feet. Anderson-Pritchard's Cully 1, in the southeast of the southwest of the northeast of Section 18, flowed 720 barrels from 2620-63 feet. Sunray Oil Company's Cully 3, in the northwest of the northeast of the southeast of the northeast of Section 18, flowed 612 barrels from 2564-2636 feet. I. T. I. O.'s Bingham 2, in the southwest of the northeast of the southwest of Section 8, swabbed 274 barrels from 2397-2416 feet, 34 gravity crude while the bulk of production in this area is 30 gravity. Gilcrease Oil Company's Reed 1, in the northeast of the northwest of the northeast of Section 18, flowed 385 barrels from 2594-2650 feet. Mid-Continent's Fleet 5, in the southwest of the southeast of the southeast of Section 7, is a 500 barrel well from 2550-2615 feet. Fleet 7, in the northwest of the southeast of the southeast of Section 7, flowed 800 barrels from 2589-2605 feet. Fleet 10, in the southeast of the southwest of the southeast of Section 7, flowed 350 barrels from 2670 feet and incompleted with drilling continuing at 2775 feet. Fleet 11, in the sonthwest of the southeast of Section 7, flowed 510 barrels from 2591-2641 feet. The Texas Company's Hyde 4, in the northwest of the northeast of the southeast of Section 7, swabbed 180 barrels from 2620-42 feet. Hyde 5, in the southwest of the northeast of the southeast of Section 7, swabbed 230 barrels from 2419-30 feet.

Ramsey Brothers last week completed Robbins 1, 12 miles northwest of Ada, Pontotoc County, located in the northwest of the northeast of Section 32-5-5, for an estimate of 700 barrels, 38 gravity, crude from Viola lime topped at 2630 and drilled to 2665 feet. This field, known as the Bebee district, has produced for more than a year from Hunton lime slightly above the new production depth. I. T. I. O. Company has some Viola lime production from a location one mile north, but it has not held up as was originally expected. The area has considerable gas, and the well is flowing by heads. The operators have a block of 400 acres around this producer.

Continental Oil Company has the biggest well in the Pearson-St. Louis

fields of Pottawatomie County, its No. 5, in the northeast of the northwest of Section 19-7-4, which initially flowed 150 barrels an hour from Hunton lime at 3948 feet, was holding at around 1650 barrels late last week. Gypsy et al's Leclair 1, in the northeast of the southeast of the northeast of Section 23-7-4, was averaging in excess of 1600 barrels, while Leclair 2, in the northwest of the southwest of the northeast of the same section, was making 1400 barrels. Magnolia's Robbins 2, the biggest initial well in the area, was producing 1510 barrels. Magnolia's Singletary 2, in the northeast of the southeast of the northwest of Section 23-7-4, flowed 45 barrels of water per hour last week from Simpson sand at 4365-70 feet. The Simpson sand discovery, McCullouch Oil Company's Smith 1, in the northwest of the southeast of Section 25-7-4, was averaging around 925 barrels on gas lift. Magnolia's Hembree 1, the Wilcox discovery in Section 19-7-5, the old Maud field, is averaging approximately 1000 barrels, flowing by gas lift.

Burbank Down

Production from 2070 wells in the Burbank field was down to 35,700 barrels daily for the past week, representing a decline within the past month of more than 7500 barrels. The new development on recently acquired Osage Indian leases is failing to hold up to the point of putting this field in the class of endangering markets.

The most outstanding completion in Kansas during the past week is Streeter & Stearns' Mermis 2, located in the northwest of the southwest of Section 33-13s-15w, Russell County. This well, started following discovery of deep pay in the No. 1 near Gorham, swabbed and flowed 65 barrels per hour Sunday from 3303½-10½ feet, with 15 per cent water. Preparations were being made to plug the hole back in an effort to shut off water. Sinclair Pipe Line Company is handling the oil from the Gorham field by tank car. Vickers Petroleum Company and Tom C. Johnson added the third well to the Gorham pool by completion late in the week of their Gorham 1, offset to the discovery well, for an estimate of 700 barrels of 36 gravity oil from sand at 3322-26 feet. The well has little gas pressure like the discovery, and will be placed on the pump.

Gypsy Oil Company is laying a four-inch line to its Wilcox sand discovery wildcat, Douglas 1, in the northwest of the northwest of the northeast of Section 23-24-2w, Sumner County, Kansas, from the railroad at Drury, where oil from the producer, shut in since completion August 11, 1927, can be handled out by tank car. Wentz Oil Corporation, the only close-in acreage holder aside from the Gypsy, is building a rig for Crane 1, in the southeast of the southeast of the southwest of Section 14, a northwest offset to the Gypsy producer. Douglas 1 had the Wilcox sand at 4492-99 feet and produced an initial of 493 barrels. It was a rank wildcat test approximately 20 miles northwest of the Braman field. Due to the fact that Wilcox sand has heretofore been of little importance, comparatively, in Kansas fields, this well's performance, when opened, will be of considerable interest to Kansas operators.

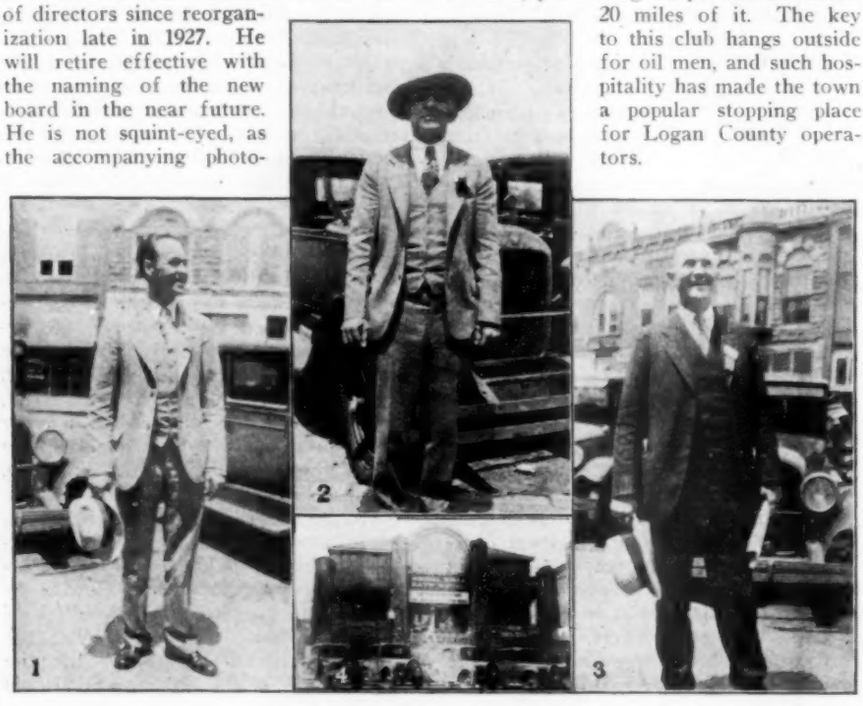
Our Camera Man Among the Oil Scouts at Guthrie

No. 1—Fred J. "Smiling" Hill, scout in the Shawnee-Seminole district for Mid-Continent Petroleum Corporation, will lead the Mid-Continent Oil Scouts and Land Men's Association during the coming year. His popularity among scouting organizations in the Mid-Continent territory is indicated by his unanimous election to president of the association at the recent convention held in Guthrie. He succeeds C. E. Savage, Carter Oil Company scout.

No. 2—Rex L. Dawson, assistant chief scout for Carter Oil Company, has served the association as chairman of the board of directors since reorganization late in 1927. He will retire effective with the naming of the new board in the near future. He is not squint-eyed, as the accompanying photograph implies, but with his eyes shut he couldn't be accused of posing for a camera.

No. 3—C. R. Welch, land man for Roxana Petroleum Corporation and Comar Oil Company in the Ponca City district, was unanimously named first vice president of the association, succeeding C. E. Hewitt, Mid-Continent Petroleum Corporation scout.

No. 4—Guthrie, the scene of association's convention April 27-28, is credited with being the only town in the world having a permanent, well-equipped petroleum club, that is open day and night for oil men, yet having no production within 20 miles of it. The key to this club hangs outside for oil men, and such hospitality has made the town a popular stopping place for Logan County operators.



Little River Curtailment Extended 30 Days

Tulsa.—Development restrictions, now in force in the Little River pool, were extended another 30 days from May 15 when holders of leases in the area met this afternoon. Final approval of one concern, the Reiter-Foster Company, will have to come from New York to make the agreement unanimous.

An adjustment between the Blackwell Oil & Gas Company and holders of neighboring leases was made part of the agreement. This will allow the Blackwell concern certain privileges in drilling to offset drilling and production already accomplished on the neighboring leases.

Of perhaps greater importance than extension of the present restrictions was a move to bring the Little River pool under a restriction of 90 days. A vote was taken to get expression on this proposition. Many favored the longer and more drastic restriction, but several company representatives asked for further time in order to lay the proposition before other executives of their concerns.

Restrictions at Little River will hold back at least 125,000 barrels of oil. It was stated that the pool will have output of at least that figure within 45 days, unless restrictions are continued.

Fifth Well Completed on Kelso Bayou Dome

Humble completes line to Sugarland wildcat producer which is holding to original flow, and starts second test

By JACK LOGAN
Staff Representative

HOUSTON—Producing wells on the Kelso Bayou dome, east of Hackberry, Cameron Parish, Louisiana, now number five, following completion late last week of Yount-Lee Oil Company's State Land 8; and the average daily production of the field is around 3200 barrels.

The new Yount-Lee well came in for an initial flow of 500 barrels pipe line oil, 22 gravity, through a three-eighths-inch choke, producing from approximately 15 feet of sand, the top of which is around 3925 feet. According to reports this week, the well is flowing about 280 barrels a day. It is located in the western part of the present proven field, in Kelso Bayou.

The Yount-Lee Oil Company's State Land 10, which was completed a few days before the No. 8, making 2250 barrels initial, is holding up well, its present production being around 1700 barrels of oil, with 6 per cent water. State Land 6, Yount-Lee's first well completed in this field, is producing about 180 barrels a day, running the company's total Kelso Bayou production to nearly 2200 barrels a day. All three of the producers are in the bayou, on a State lease.

The rest of the production of the field is from two wells of the Calcasieu Oil Company, Magnolia Petroleum Company and the Union Sulphur Company; the Olevia 1 producing 1000 barrels a day, while the Watkins 1 is making around 160 barrels.

The Yount-Lee Oil Company, following completion of its No. 8 and No. 10, is rigging up for State Land 9 and State Land 11, the latter of which will be the most easterly and the most northerly test in the field proper.

The Calcasieu Oil Company, operating the properties which it owns jointly with Magnolia Petroleum Company and the Union Sulphur Company, is rigging up on three new tests in the field. The Watkins 4 should prove to be a good well, as it offsets the Yount-Lee State Land 10, the best well that has been drilled in the field, being 50 feet west and 20 feet north of it. Calcasieu's Watkins 5 is 125 feet east of the No. 4; and the third of the three new tests, the Doiron 2, is in the southwestern part of the field, its location being 307 feet south and 50 feet east of the Doiron 1, which missed the pay and was abandoned.

The Caldwell 2 of the Calcasieu Oil Company, Magnolia Petroleum Company and the Union Sulphur Company, which was the discovery well of the field, and was drilled deeper recently, will be put on the pump—the first well of the field to be pumped. The Caldwell 3, which developed casing trouble and began making an excessive amount of water shortly after it was completed two or three weeks ago, will be deepened from its present depth of 4010 feet, and according to a late report, screen was being pulled.

The Louisiana Land & Exploration Company has abandoned its Calcasieu Lake B-1, located about one-half mile northeast of the producing wells in and adjacent to Kelso Bayou, after drilling into cap rock and proving that the dome extends at least to that point; and will make location for another test, the Calcasieu Lake B-2. With the largest producer of the dome located in the eastern part of the field, and most of the activity moving in that direction, the operations now in progress will be watched with considerable interest.

In the Black Bayou district, several miles west of the Kelso Bayou field, the Roxana Petroleum Corporation has abandoned its Watkins Estate 1, having drilled into salt around 1700 feet.

Outside of these tests in the Hackberry district, the drilling operations of Southern Louisiana embrace very little at present out of the ordinary.

In the proven fields of that part of the State only two tests were completed during the past week: Gulf Refining Company of Louisiana's Star-Vincent 45 at Vinton, a 100-barrel pumper at 3050 feet; and Green Oil Company's Read 1 at Edgerly, abandoned at 4000 feet.

In the Coastal country of Texas, eight tests were completed during the week in wildcat or semi-wildcat areas, only one of them being a producer. It was Roxana Petroleum Corporation's Allen 4 on Allen dome, Brazoria County. It came in flowing 225 barrels of oil through a one-half inch choke, and registering gas pressure of 160 pounds, the total depth of the hole being 5110 feet. This well was completed originally about the first of February, this year, flowing for several hours but then quitting. The depth at that time was 4900 feet.

Roxana's Allen Bernard 1 on the same dome has been producing from 10 to 35 barrels a day for about three months, and is still on the beam, while the Randon 1 is fishing for drill pipe.

Seven tests of Coastal Texas in unproven areas which were abandoned during the past week were as follows: The Humphreys Corporation's Barber A-1 and Mt. Bellview Oil Company's Williams 1 at Barbers Hill, abandoned at 1150 and 4550 feet, respectively; Gulf Production Company's Trone 7 at Long Point, Fort Bend County, and its Bordages 5 at Fannett, Jefferson County; R. L. Young's Wood 1, in the northwest extension of the South Liberty field, abandoned in cap rock at 1290 feet; H. R. Cullen's Brock 1, near Almeda, Harris County, abandoned at 3500 feet; and the J. R. Farmer 7 of the Texas Gulf Sulphur Company and the Sun Oil Company in the Boling district, Fort Bend county.

On the Sugarland dome, Fort Bend County, Humble Oil & Refining Company has started a second test in the vicinity of its discovery well there. The new test is the Sugarland Industries 2, located 900 feet northeast of the discovery well, the No. 1. Its location, otherwise stated, is 450 feet out of the southeast corner of the Sugarland Industries lease. Humble's Brazos Farm 1, first offset of the discovery well, was drilling early this week at 1500 feet in gumbo.

Humble's pipe line from the Sugarland dome to Pierce Junction has been completed, and the first oil was run through it May 6. The discovery well is still flowing 250 barrels daily, with the production pinched in.

In the proven fields of the Texas Gulf Coast there were 12 completions during the past week, including two failures, one gas well, and nine producers with a combined initial yield of 2320 barrels.

Pierce Junction furnished the best of the wells, Rio Bravo Oil Company's Settegast 5, a workover, coming in flowing 800 barrels from 3825 feet.

There were two fairly good wells also at Blue Ridge, both being new wells; Watts Brothers' Blakely 3 flowing 300 barrels initial from 3680 feet, and Sinclair Oil & Gas Company's Davison 3 having an initial flow of 500 barrels at 3550 feet.

At Saratoga two wells were completed as pumpers. Rio Bravo Oil Company's Jardit began pumping 150 barrels, 40 per cent water and basic sediment, from the 1160-foot level; and Paggi Brothers' Queen City 45 pumped 300 barrels, 95 per cent water, from 1200 feet.

In the Hull field Republic Production Company completed two workover wells, as follows: Dolbear 56, which made 4000 barrels of fluid, including 400 barrels of oil, using air lift, and the Dolbear 77, pumping 200 barrels, 35 per cent water at 2375 feet. Gulf Production Company's Phoenix Development Company 20 in the same field was completed as a gas well at 3050 feet.

Gulf Production Company abandoned its Jeannette Mann 1 at Spindle Top after drilling it deeper to 4215 feet and finding salt water.

Third Champagnolle Completion Largest in Field

SHREVEPORT, La.—The completion of the third successful producer in the Champagnolle field, of Union County, Arkansas, and the largest well yet brought in in the field, now gives that area all of the earmarks of a real oil field, and has resulted in a more intensive effort on the part of neighboring operators who are drilling wells in the newly discovered producing territory. In the meantime, the Cotton Valley field, in Webster Parish, where Trinity production was uncovered by the completion of the Ohio Oil Company's Bodcaw 38, section 15-21-10, suffered a distant set back when the Magnolia Petroleum Company's Cox 1, in section 22-21-10, approximately three-quarters of a mile southeast of the discovery well, tested salt water at 4752 feet. This is the second failure of the efforts of this company to secure production from the same sand as that found in the Ohio's well, as they recently completed Cole 1, section 27-21-10, as a small gas well at 4729 feet. This well is about two miles south of the Ohio's producer. At this depth, after allowing for difference in elevation of the two wells, the Magnolia's well is approximately 11 feet deeper sub-sea level than the Ohio well. Failure of these two wells leads to the belief that the producing structure will be found to be very irregular, or spotted, or will not extend very far in this direction.

Drilling activity in the Champagnolle area that was started during the past month upon completion of the Pure Oil Company's Gregory well, in section 10-17-14, was given a decided boost last week when Dr. Rushing et al brought in Gregory 1 in the adjoining section, and midway between this well and the only other producing well in this sand in the field, the Magna Production Company's Dumas 1, in the same section. Dr. Rushing et al's Gregory well was drilled to 3208 feet, penetrating the sand 16 feet, and was brought in on May 1 with an initial flow of 160 barrels an hour, later increasing to around 4000 barrels a day. The production is about the same as that produced in the Pure and Magna wells, testing 36.2 gravity, with no indication of salt water, and only one-half of 1 per cent sediment. The well is now flowing 4300 barrels a day through one four-inch flow line and a one-inch choke. This well has shown a slight increase in production each day since it was brought in. Both the Pure and Magna wells are maintaining a steady flow, each being restricted to a one-inch opening. The Pure's Gregory well is flowing 1465 barrels, and the Magna's Dumas well is producing 865 barrels a day. Neither has shown any sign of salt water.

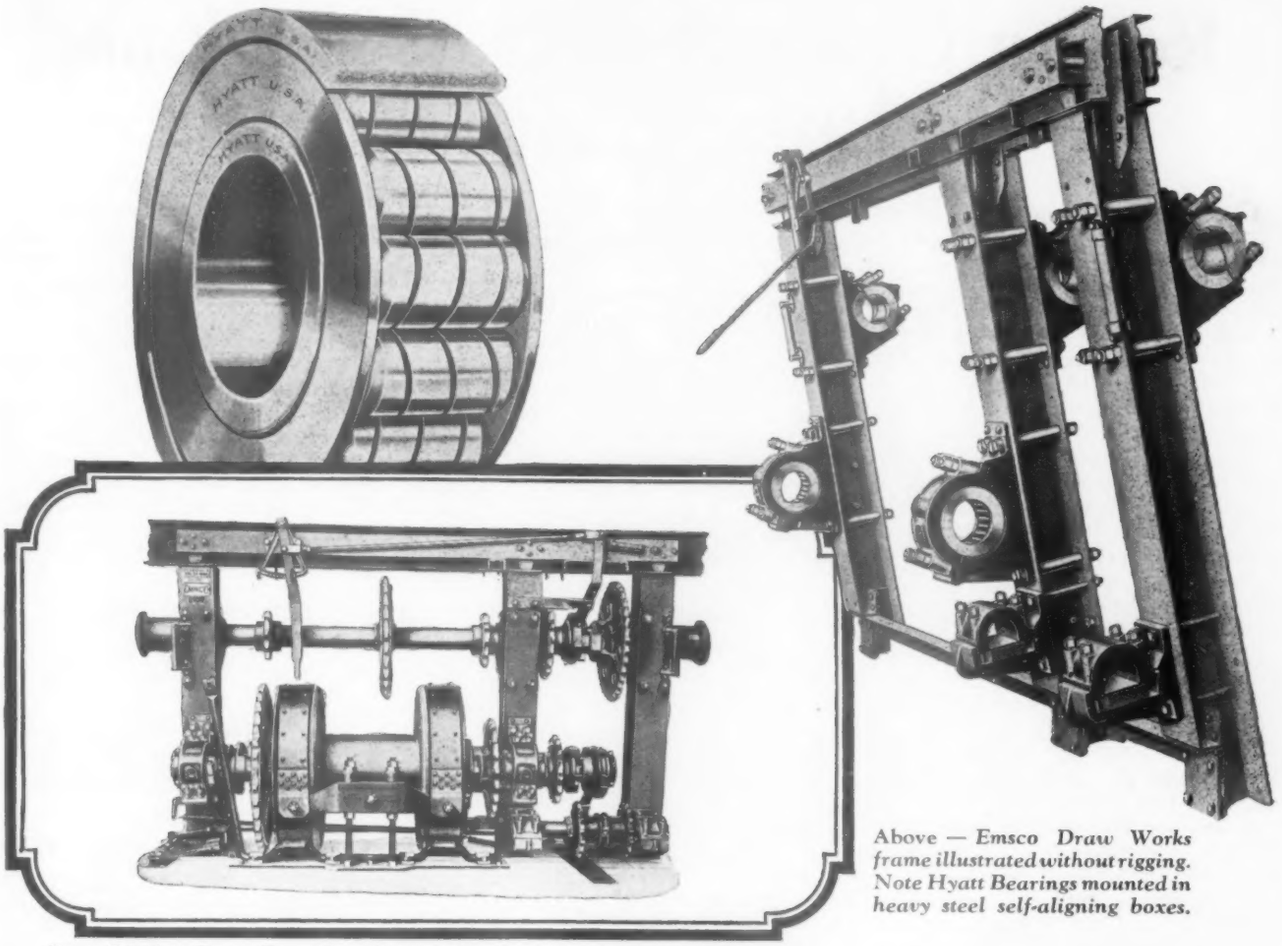
Drilling operations are being started in all directions from the three producers in the Champagnolle field, and there are now approximately 35 wells drilling in and around the area which less than one month ago was considered the most active in Arkansas with about five drilling rigs within a radius of a few miles. Several wells that had been shut down as failures in the shallow sand have now been deepened to the 3200 foot formation, with the result that several additional wells will be tested in this sand much sooner than they would have been had they been drilled from the top of the ground after the discovery well was brought in. Dr. Rushing et al have deepened Gregory 2 to 3212 feet, and will set casing at 3192 feet for test. The Lion Oil and Refining Company is preparing to drill plug in the well formerly known as the Arkansas Drilling Company's Rowland 1, in section 15-17-14, at 3205 feet. Casing was set in this well after five feet of sand had been found.

New pipe lines are being laid into the field from several different directions. The Lion Oil Refining Company has completed laying a four-inch line from its refinery at El Dorado, but has made no connections in the field. The Texas Company is reported making a survey for a four or six-inch line from its Hayes pump station into the new field, which line will entail the laying of approximately 10 miles of pipe. The Shreveport-El Dorado Pipe Line Company has completed the survey for a six-inch line which is expected to be laid from their Carnie pump station in section 14-19-16 to section 11-17-14, the present center of the Champagnolle field, a distance of about 16 miles. Very few trades are being made in either royalty or leases as most of the acreage is held by major companies, and royalties are demanding good prices.

The Cotton Valley field is the center of much speculation following the failure of the Magnolia Petroleum Company's Cox 1, which was carefully cored to 4752 feet during the past week, where it tested salt water that could not be bailed below 1700 feet. At this depth, allowing for difference in elevation of this and the Ohio's Bodcaw producer, this well was 60 feet deeper on the structure, while it was 100 feet deeper than the same company's Crichton gas well, in section 21-21-10, approximately one mile west and south. The failure of this well, together with the one in section 27, which was completed as a gas well with an initial production of the approximate capacity of the wells that have formerly been finished in the 4200 foot gas strata, lends this field the appearance of the recent Trinity catastrophe of the Pine Island field in Caddo Parish, and much comment can be heard as to whether this territory will be but another Pine Island. In spite of this, drilling tests are being rushed, and several important tests will be made shortly. Among these the Humble Oil & Refining Company is nearing a casing seat in Webb 2, section 14-21-10, now drilling below a depth of 4200 feet; the Louisiana Oil Refining Corporation is coring around 4650 feet in Davis 1, section 23, and will perhaps be the first to test; the Ohio Oil Company is temporarily bothered with a leaking string of casing in Holloway 3, section 23-21-10, at 4411 feet, and will incur some delay in shutting off this leak.

There are now about 20 wells being drilled in the Cotton Valley field, with indications that considerably more activity will follow should additional wells be brought in to definitely establish the sand. The Ohio's discovery producer continues to flow close to 3000 barrels of high gravity oil, which is alluring to all of the present companies who own acreage in the field, but the majority of them seem to be of the same opinion as regards drilling plans, that is, that it is much wiser to drill only one or two wells until it is definitely settled that the Trinity will yield oil in other parts of the field. Should the trend of production once be established, it is possible that activity here will rival that in the Champagnolle, Arkansas, field, although it requires perhaps thrice the amount of money to drill wells here as it does in the shallower producing field. During the time that the Ohio's Bodcaw well has been flowing, it has showed no sign of salt water, and the fact that the Magnolia's Cox well was drilled 60 feet deeper than the bottom of the hole in this well before salt water was encountered, is very encouraging.

Another possible strike was made in the Shreveport territory during the week when the Palmer Corporation brought in its O'Brien 1 wildcat in section 7-19-11e, east Carroll Parish, as a commercial gas well. Originally tested at 2350 feet, the bottom of the hole being in only one foot of sand, the well was brought in with an initial production of about 5,000,000 cubic feet of gas. It was later killed and drilled five feet deeper, to 2355 feet, in soft gas rock. It was bailed at this depth Monday and showed a production of approximately 20,000,000 cubic feet of gas, accompanied by about 5000 to 10,000 barrels of salt water. In spite of the large amount of salt water, the well is considered of prime importance as it establishes possibilities for an area that has not heretofore been productive. The Palmer well was only allowed to flow about one-half hour. Should a good gas producing field be uncovered in this section, and the increasing amount of activity in the Carterville field, in Bossier Parish, continue to be rewarded with the successful completion of very good gas wells, together with the persistence with which wells are being drilled in the Richland Parish field, it will only be a matter of a short while until the numerous large trunk lines that supply gas to distant places from fields throughout this territory will be taxed to capacity.



Above — *Emsco Draw Works frame illustrated without rigging. Note Hyatt Bearings mounted in heavy steel self-aligning boxes.*

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Report Gives Details of Stock and Production Gain in March

PRODUCTION of crude in the United States during March amounted to 74,465,000 barrels according to report issued by the Bureau of Mines. This total represents a daily average of 2,402,000 barrels, or a gain over February of 55,000 barrels. The major part of the gain was recorded in the West Texas district.

In the West Texas area, daily average production rose from 280,000 barrels in February to 332,000 barrels in March. This material gain in output enabled the district to eclipse the Seminole area in production.

Practically all the increase in West Texas occurred in the Hendrick pool of Winkler County, where a number of exceptionally large wells were completed during the month. The total area showed 68 producing wells completed in March, with an average of 4200 barrels each.

Daily average production at Seminole declined, as was anticipated, but the decrease amounted to only 15,000 barrels. Completions in this field showed a 50 per cent decrease.

Production in both the Seal Beach, California, and the Panhandle, Texas, sections declined slightly. In the Long Beach, California field, completions were nearly double those of February, with the result that daily average production showed a moderate increase.

The Texas increase put this State ahead of all others in production of crude, for the first time, with the possible exception of a month or two during the height of the Spindle Top boom in the early part of this century.

Daily average production of the critical districts was as follows: Seminole, 314,000 barrels; Panhandle, 72,000 barrels; Seal Beach, 40,000 barrels; Long Beach, 125,000 barrels; and West Texas, 332,000 barrels. Average initial production from producers completed in these districts was: Seminole, 500 barrels; Panhandle, 400 barrels; Seal Beach, 100 barrels; Long Beach, 1900 barrels; and West Texas 4200 barrels.

The number of drilling wells in each section on March 31 was as given below: Seminole, 110; Panhandle, 136; Seal Beach, 2; Long Beach, 174; and West Texas, 313.

From these figures it can be seen that the only district likely to increase its influence on the general situation is West Texas. Recent proration orders for the Winkler district and plans now in progress for controlling the output of other West Texas fields, are calculated to minimize the bad effects of over-production.

Stocks Increase

Total stocks of all oils amounted to 609,561,000 barrels, a gain over February totaling 5,808,000 barrels. This compares with an increase in stocks of all oils in February over January, of 7,451,000 barrels.

Stocks of crude at refineries increased approximately 1,250,000 barrels; stocks of domestic crude at tank farms and in pipelines, 3,444,000 barrels. More than one-half of the latter was West Texas oil; probably one-fourth was Seminole crude.

Imports of crude petroleum during March amounted to 6,845,000 barrels, the greatest amount for any single month during the past two years. The major portion of this oil was received from Venezuela, although the increase in receipts of Mexican oil was also noteworthy.

From the accompanying table of imports for the first three months of the year, it can be seen that the amount of oil received from Venezuela and Mexico is increasing, but that from Colombia and other countries is showing no appreciable tendency to gain. Colombian imports will remain more or less constant due to the fact that the only outlet for oil from that country is

ANALYSIS OF SUPPLY AND DEMAND OF ALL OILS
(U. S. Bureau of Mines Report, Subject to Revision)

(Including wax, coke and asphalt in thousands of barrels of 42 U. S. Gallons)

	March, 1928	Feb., 1928	March, 1927	Jan.-March, 1928	Jan.-March, 1927
New Supply:					
Domestic production:					
Crude petroleum:					
Light	65,896	60,076	65,435	190,238	185,609
Heavy	8,569	7,983	9,869	24,607	29,044
Total crude	74,465	68,059	75,304	214,845	214,653
Natural-gas gasoline	3,426	3,279	3,271	10,072	9,349
Benzol	238	217	226	681	643
Total	78,129	71,555	78,801	225,598	224,645
Daily average	2,520	2,467	2,542	2,479	2,496
Excess of daily average domestic production over domestic demand	342	385	437	402	448
Imports:					
Crude	6,845	6,036	4,434	19,026	13,129
Refined	1,135	1,054	1,027	3,354	3,724
Total new supply all oils	86,109	78,645	84,262	247,978	241,498
Daily average	2,778	2,712	2,718	2,725	2,083
Change in stocks all oils	5,808	7,451	8,365	22,399	24,386
Demand:					
Total demand	80,301	71,194	75,897	225,579	217,112
Daily average	2,590	2,455	2,448	2,479	2,412
Exports:*					
Crude	1,530	1,243	1,199	4,005	3,568
Refined	11,247	9,578	9,450	32,563	29,198
Domestic demand	67,524	60,373	65,248	189,011	184,346
Daily average	2,178	2,082	2,105	2,077	2,048
Stocks (end of month):					
Crude:					
East of California:†					
Light	317,429	312,700	244,785	317,429	244,785
Heavy	50,670	50,640	45,325	50,670	45,325
California:					
Light	19,633	20,110	29,568	19,633	29,568
Heavy‡	94,484	94,797	87,886	94,484	87,886
Total crude	482,216	478,247	407,564	482,216	407,564
Natural gas gasoline at plants	842	824	697	842	697
Total refined	126,503	124,682	136,222	126,503	136,222
Grand total stocks all oils	609,561	603,753	544,483	609,561	544,483
Days' supply§	235	246	222	246	226
Bunker oil (included above in domestic demand)	4,236	3,751	3,874	11,770	11,401

*Includes shipments to non-contiguous territories. †Exclusive of producers' stocks. ‡Includes fuel oil. §Grand total stocks divided by daily average total demand.

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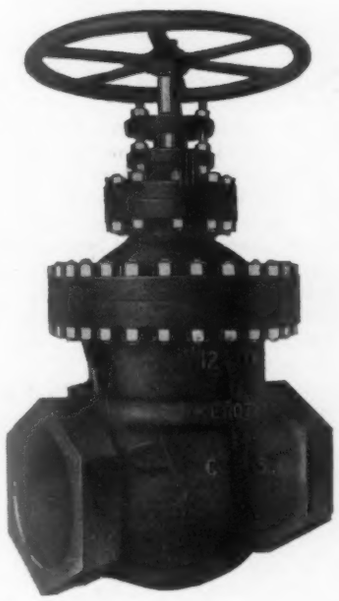

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Stocks in All Principal Fields

Long Beach Production Raised 5,000 Barrels

Water showing in edge wells not alarming to operators; Huntington Beach field continues steady decline in output

By BRAD MILLS
Staff Representative

LOS ANGELES.—The action of the Long Beach field during the past week was not so impressive as during the previous week, but the eight completions were sufficient to move production up about 5000 barrels. A few wells near the edge of the field showed some water on the initial test, but the condition is not alarming, since earlier completions showed the same tendency when drilled below a certain level. Three wells were taken off production for various reasons, leaving the new completions to offset these as well as the natural decline from all other producers. A ray of hope was seen in the small number of new locations made during the week. During April almost as many wells were started as were completed, but it is believed that new locations will taper off rapidly during May. The townlot nature of the development has been responsible for the steady stream of new wells during the spring months. The deepening campaign started in a rather modest way, but as it gained momentum operators who had been satisfied with production from the old level caught the spirit and either deepened old wells or drilled new ones outright to participate in the flush output from the deep zone. There are still nearly 200 active drilling operations in the field.

Drilling mud from an adjacent well has temporarily put the Shell Company's Alamitos 28 out of commission. An adjoining drilling well ran into the Shell's producer, which had been on production about two weeks, quickly killing it. It is the second instance this year of wells running together, and gives a good idea of the intensity of drilling operations in the Long Beach field.

Richfield's Denni 6 continues the most interesting test in the field. The well was drilled to 7401 feet and will be completed next week as the deepest producer in the field. Incidentally, it will also be the deepest producing oil well in the world, although it probably will not hold the honor long. The casing record of the remarkable well is very interesting, showing 13⅜-inch casing cemented at 2492 feet, 8⅝-inch at 4878 feet and 5¾-inch landed on bottom. The last string was cemented through perforations at 5197 feet, giving the well more than 2200 feet of oil sand. The completion of this test will mean much to the future of the field, and will have an important bearing upon the depth at which many of the wells drilling near the center of the field will be finished. Only one other well has been completed below 7000 feet and it has been one of the most consistent producers yet drilled to the deep zone. Its initial production was not high, and it is possible that Richfield's Denni 6 will not be larger than the average. The great body of oil sand included, is sure to result in a long-lived producer.

Completions

With an initial production of 2600 barrels, the Chicksan Oil Company's No. 1 was one of the best completions of the week. The well was a workover and was drilled to 6574 feet. The oil was 31.3 gravity and showed a negligible cut. The General Petroleum Corporation, which obtained its first deep production a week ago, scored again during the week with the completion of Clock 4. The well came in with an initial production of 2500 barrels from 6838 feet. The oil was 31.5 gravity and showed a cut of less than one-half of one per cent. The well is also making almost 2,000,000 cubic feet of rich gas. A. T. Jergins, already a large independent producer, recompleted M. T. 13 as a 2500-barrel well at 6105 feet. The oil was extremely clean and showed a gravity of 29.5 degrees. The Pan American Petroleum Company completed McKeon 2 and McKeon 3 and production was much smaller than expected. The former was a recompletion at 6420 feet and produced only 350 barrels on the initial test. The oil was 29 gravity and showed a cut of nearly six per cent. It was one of the smallest wells completed in the deep zone. McKeon 3 was drilled from the surface and came in with an initial production of 1300 barrels from 6410 feet. The Cypress Oil Company recompleted Crest 3 at 6100 feet, the initial production being about 1300 barrels. The oil was only 25 gravity but this was attributed to a cut of 14 per cent. Graham and Loftus completed Acme 1 at the unusually shallow depth of 5596 feet but obtained a production of 1500 barrels. The oil was 28 gravity, with a very low cut. Signal Syndicate No. 4 completed its No. 7 as a 1500-barrel producer from 6066 feet but the gravity and cut of the oil was not available.

The Pacific Eastern Production Company is still coaxing its Union Avenue 2 to flow, but the well has failed to respond to persistent bailing and an occasional swabbing. A plug was cemented at 4310 feet and there is a possibility that surplus cement is retarding the flow. The company is carefully reaming the hole before making another test. A location for a third test has been made south and west of the first well.

Huntington Beach Declining

Running true to form, the Huntington Beach field is showing a steady decline. Initial production during the past two months has been negligible and the dozen or more drilling wells, when completed, are not expected to offset the natural decline. J. A. Brower will not abandon his Traveler 1, as previously reported, but will attempt to effect a water shutoff at some point above the present bottom—5485 feet. The well will be tested with a series of plugs.

Storage tanks have been completed at Potrero by the Associated Oil Company and a further test of Cypress 2, recently completed with an initial production of 1000 barrels of 48 gravity oil, will be made.

Ventura

The Associated Oil Company stopped drilling at 7528 feet in Lloyd 100, the deepest test yet drilled in the Ventura field, but later decided not to complete the well at this depth. More hole will be made before a production test is made and it is possible that the well will be the deepest oil well ever drilled. It is already deeper than any other well producing at this time, but falls a little short of E. J. Miley's famous producer in the Rosecrans field, which produced for a time at 7691 feet. When completed, the well will have about 2000 feet of producing zone. The M. K. T. Oil Company is testing a body of sand found between 4880 and 4930 feet in Foster 1, which is located south of the present producing limits of the field. The formation showed both gas and oil and the completion of a producer would considerably extend the present productive area. The company did not get a water shutoff with the 11¾-inch casing at 4600 feet and a

string of 6⅝-inch will be run and cemented at 4880 feet for another test. The hole will be plugged to 4930 feet in an effort to eliminate more than 50 feet of questionable sand. Fourteen wells are drilling below 6000 feet and four tests have reached a depth of 7000 feet. Several wells completed a few weeks ago are due for curtailment after a 30-day test and new production probably will hold the field output to about 50,000 barrels.

The Belridge Oil Company has greatly increased the production in its No. 118, section 34-28-21, in the Belridge field, by deepening the old well from 825 to 2850 feet. From the original depth, the well produced a small amount of heavy oil, while from the new level production is about 200 barrels of 30 gravity oil. The particular value of the discovery lies in the gravity of the oil, rather than the size of the well, although the average shallow producers in the area are small. The Belridge Oil Company owns a large block of acreage which completely surrounds the well.

In the Midway-Sunset district, field operations are confined to the deepening, drilling and cleaning out of a few wells scattered over a wide area. The possibility of a large production from the newly-discovered deep sand on and near Section 8-32-23 is considered significant and will mean the drilling and deepening of several additional wells if the Chanslor-Canfield Midway Oil Company's test on the section proves as successful as the Republic Petroleum Company's recent completion. The Republic well is still flowing more than 1000 barrels from 2750 feet and shows no signs of falling off. The C. C. M. O. test is checking slightly lower on the structure than the Republic well, but its completion will at least give some idea of the extent of the deep zone. The Standard has completed No. 92, section 33-31-24, as a small well at 4280 feet, initial production having been 130 barrels. The Signal Gasoline Company has again placed No. 1, section 8-11-23, on production after deepening to 3145 feet. The gross output was only 100 barrels.

Rincon

Two wells were completed in the Rincon field during the week, but their action failed to disclose the true value of the upper sand. Both wells were finished between 3100 and 3200 feet and included the same part of the sand that has furnished the only worthwhile production in the field. They were Pan American's Hobson 6 and Hobson 7, which were completed at 3170 and 3200 feet, with an initial production of 550 and 750 barrels, respectively. Since the first completion around 3100 feet, the operators have been feeling for this particular part of the sand. The virtual failure of the Pan American's State 2 at 3955 feet has thrown the burden even more on the 3100-3200-foot level. State 2 had been groomed for a large well and its action was a distinct disappointment. About 50 feet of good oil sand was included but the well simply failed to flow consistently. Production on the pump is less than 100 barrels. The failure of the well has influenced the Miley Oil Company to drill considerably deeper in Hobson 1, which was scheduled for completion below 3900 feet. Miley had already set 11¾-inch casing at 3940 feet, but has temporarily abandoned the idea of a test and is coring below 4000 feet. Chanslor-Canfield Midway is completing Hobson C1 at 3125 feet after a series of very small wells in the upper part of the sand.

The deep sand in the Seal Beach field is at least one formation in the Los Angeles Basin that seems destined to fall by the wayside. The zone has been disappointing from the first and the recent completion of a 300-barrel well by George F. Getty, Inc., places a still deeper stamp of doubt upon it. The Getty well actually produced at the rate of 650 barrels, but about half of the fluid was water. The Getty well alone does not condemn the entire deep zone, but its poor showing, coupled with a small yield from other wells, strongly indicates that a large production will not be developed. The cost of deepening a well to 6500 or more is considerably higher than a small production would justify. The California Eastern Oil Company's Horowitz 1, located on the extreme eastern side of the townlot area, staged an unexpected demonstration by flowing itself in as a 20,000,000 foot gas well after perforations were made in the casing above a plug at 5460 feet. It was the largest gas well ever completed in the field. After flowing for a day, the well started making oil and is now producing about 250 barrels along with the gas. Production is coming from what probably would correspond to the Bixby or Selover sands in the main field. Before plugging back from 5503 feet, the well was producing only 120 barrels of 50 per cent cut oil.

Natural Gasoline Plants in the United States

There were 1155 natural gasoline plants in the United States on January 1, 1928, according to a survey made by the United States Bureau of Mines, Department of Commerce. In addition, there was one small plant in Alaska. Of the total plants, 1060, or 92 per cent, were in operation on January 1, leaving 95, or 8 per cent, inoperative. The total number of plants had an indicated capacity of 8,048,000 gallons per day, of which only 294,000 gallons, or 4 per cent, was shut down on January 1.

Oklahoma is by far the leading State in number of natural gasoline plants, with a total of 331, followed by California, Texas and Pennsylvania, closely grouped. Oklahoma is also first in total capacity, followed by California and Texas. The difference in size of plants as between the older producing districts and the more recent fields is illustrated by the fact that Pennsylvania, with a total of 153 plants, has a total capacity of only 131,000 gallons as compared with 157 plants of 1,677,000 gallons total capacity in Texas. In addition to the State named, plants were located in Arkansas, Colorado, Illinois, Kansas, Kentucky, Louisiana, New Mexico, New York, Ohio, West Virginia and Wyoming.

The popularity of the absorption method of extracting natural gasoline is vary apparent; a total of 526 plants, with a total capacity of 5,476,000 gallons, use the process, whereas 497 plants, with a total capacity of only 1,398,000 gallons, use the compression process. A total of 105 plants use a combination of processes, principally a combination of the compression and absorption processes, and 27 plants, of a total capacity of 214,000 gallons, use the charcoal process.

Despite a general decline in natural gasoline prices during the past few years, the number of gasoline plants has increased, the bureau points out. This apparent paradox is due to a number of reasons, such as reduced costs and greater efficiency in operation, to an increase in number of portable plants, or, in general, new plants built to keep abreast of the rapid expansion in crude petroleum production. While the number of plants is increased, the number of operators has declined, showing a tendency to centralization as a cost reducing factor.

The results of this survey are given in Information Circular 6062, "Natural Gasoline Plants in the United States," by G. R. Hopkins and E. M. Seeley. Copies of this circular may be obtained from the United States Bureau of Mines, Department of Commerce, Washington, D. C.

Richfield Earnings

Los Angeles.—The Richfield Oil Company earned $2,578,444 during the first quarter of 1928, or 70 per cent more than during the corresponding quarter of 1927, according to the company's report recently made public. This amount is subject to a deduction of $1,187,925 for depletion, depreciation, interest charges, etc., leaving a net income of $1,390,516 before the payment of federal taxes. Gross sales amounted to $10,147,643, as compared with $8,943,077 during the first quarter of 1927. The company owns more than 20,000 acres of producing and undeveloped oil and gas lands, and estimates its oil reserve at 161,000,000 barrels.

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Industrial Department

CHAMBER OF COMMERCE

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Exploration in Southwestern Humboldt County, California

NATURAL seepages of oil and gas in southwestern Humboldt County attracted prospectors to northwestern California as early as 1860-1865, when the State was having its first excitement over the possibilities of developing valuable supplies of Petroleum. Since that time a number of unusually productive oil fields have been found in California, but all of them are in the southern two-fifths of the State, no commercial production having been obtained in Humboldt County. The area of oil and gas seepages, as well as adjoining districts, in this county was examined briefly during the summer of 1926 by H. W. Hoots, a geologist of the Geological Survey, Department of the Interior.

The seepages and showings of oil and gas in wells are in the southwestern part of the county, within the drainage basins of Mattole and Bear rivers. There is also an isolated area farther southwest in the vicinity of Briceland. The rocks within and near these areas of seepages are chiefly of Mesozoic age, though late Tertiary rocks occur in parts of the region, notably along and near Eel and Bear rivers.

Character of Mesozoic Rocks

The rocks at and near the oil and gas seepages along Mattole and Bear rivers consist in the main of sandstone, shale, and conglomerate; associated with these are comparatively small amounts of hard red, gray, and black foraminiferal limestone, black radiolarian chert, and igneous rocks in the form of basaltic intrusions and pyroclastic rocks.

This group of rocks is probably all of Mesozoic age and is believed to be equivalent to some part of the Knoxville, Horsetown, and Chico formations, of Lower and Upper Cretaceous age; strata equivalent to the Jurassic (?) Franciscan formation also may be present. This entire group of Mesozoic rocks is probably of marine origin and has been divided into there formations. (1) What appears to be the oldest formation is exposed on the coast near Spanish Creek and is characterized by a very hard, thinly bedded series of black shale, black limestone, and fine gray sandstone. (2) Next in age is a well-bedded succession of alternating gray sandstone and black shale in beds one to four feet thick, which crops out on King Peak and in upper Honeydew Creek and apparently grades stratigraphically into the oldest and youngest formations. (3) The youngest series of rocks is characterized by massive ledges of hard greenish-gray sandstone, which are associated with much black and bluish-gray shale, a few hundred feet of black radiolarian chert, and irregular bodies of red and gray foraminiferal limestone and basalt. Although most of the rocks grouped under this series are probably younger than those of the two preceding formations, some of them may represent faulted masses of older rocks. This series crops out over most of southwestern Humboldt County south of Bear River Ridge and yields all the seepages and showings of oil and gas that have been obtained. The first two formations described are each about 4000 feet thick, but the thickness of the third is unknown.

Structure of Mesozoic Rocks

The rocks in the areas of oil and gas seepages, from Bear River Ridge south to the coast, have been subjected during several periods to deformation, by which the strata have been intensely folded and faulted. Throughout practically the entire area the beds stand in a vertical position, and in most of the area they strike in northwesterly and westerly directions, approximately parallel to the courses of Mattole and Bear rivers.

Much of the succession of vertical rock strata appears to be repeated at fairly regular intervals in directions across the regional strike of the beds —a relation which strongly suggests that the structure consists essentially of a series of vertical closed folds or of strike faults, or, more probably, a combination of both folds and faults. The tops of the folds, if any are present, have been removed by long-continued erosion, and, owing to the uniformly vertical attitude and fairly uniform character of the strata, axes of folds are, as a rule, not apparent in the exposed rocks; and even though their location were determined, the axes of such sharp folds would probably be of little economic importance with reference to oil and gas.

In several areas in different parts of the Mattole River district the regional strike of the vertical beds toward the northwest and west is abruptly interrupted by similarly vertical strata which strike north or northeast—a relation which apparently is due to the presence of cross faults. The cross faults and associated strike faults seem to have broken this region of vertical strata into a series of fault blocks. There is, in fact, a strong suggestion that much of the zigzag coast line of southwestern Humboldt County has resulted from a series of intersecting northwesterly and north-northeasterly faults.

Explorations for Oil and Gas in Area of Seepages

One of the first wells to be drilled in southwestern Humboldt County was the Union well, drilled in 1865 by Leland Stanford and associates (Mattole Petroleum Company) on the south bank of the lower North Fork of Mattole River in Section 30, Township 1 south, Range 1 west. This well is said to have reached about 1000 feet and to have produced by pumping about 100 barrels of oil at the rate of one barrel a day. This well, when visited by Mr. Hoots in September, 1926, was found to have oil standing within 20 feet of the surface.

About 25 wells, most of them less than 1000 feet in depth, were drilled in the Mattole country and also along Bear River and Oil Creek during the years 1865-1867, but according to reports the old Union well produced more oil than any of the others. The available records indicate that up to the present 46 wells have been drilled for oil and gas in southwestern Humboldt County, most of which are reported to have obtained shows of oil or gas in varying amounts.

The most encouraging results during recent years have been obtained by the North Counties Oil Company in its Etter 1 well on Mattole River near Honeydew, in Section 36, Township 2 south, Range 1 west. This is the deepest well drilled in the Mattole country prior to 1928. In August, 1921, oil from 1920 feet in this well is reported to have risen 510 feet in the 8¼-inch casing and to have been accompanied by a very strong flow of gas; continued bailing for five hours failed to lower the oil level, but attempts to increase production by drilling deeper were unsuccessful and resulted in a partial loss of the oil flow already obtained. The well is now idle, with considerable oil in the hole.

The oil found in southwestern Humboldt County is of paraffin base and ranges in color from dark green to amber. Fresh oil bailed from the North Counties Oil Company Etter 1 had a gravity of 45.7 degrees Baume and contained 60 per cent of gasoline and less than 1.0 per cent sulphur.

Gas collected from the seepage on the south bank of Bear River near the bridge at Capetown contained 95.6 per cent of methane, 4.1 per cent of ethane, and 0.30 per cent of nitrogen. For 35 years this seepage, according to the

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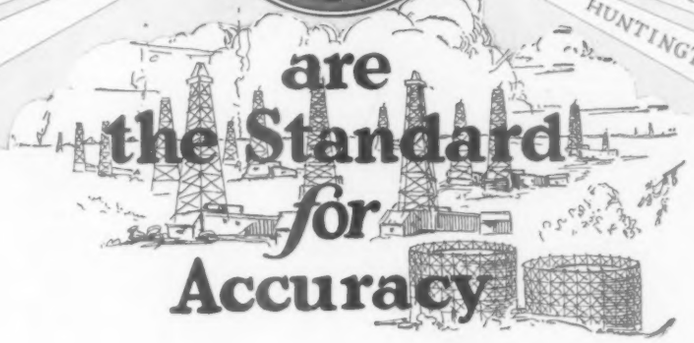

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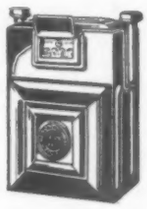

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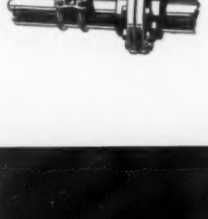

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owner, has supplied sufficient gas to run a cook stove and water heater in a near-by farm house.

Gas from a well drilled at Briceland in 1892 was being utilized in September, 1926, for lighting the local hotel and store. It is said that this well, during its early history, furnished sufficient gas for six or eight buildings.

The widespread vertical dips and faults in the Mattole and Bear River districts are not regarded as favorable for the accumulation of large bodies of oil. The results that have been obtained by some of the wells in this district indicate that oil and gas are locally trapped and prevented from escape along the vertical or nearly vertical starta. Exposed structural conditions near some of the most encouraging wells, especially that of the North Counties Oil Company, strongly suggest that at least some of these accumulations of oil and gas are in localities that have been broken by a system of faults. It seems probable that these faults have combined to produce suitable conditions for the local accumulation and retention of oil and gas, but it is uncertain that such local deposits, when tapped by the drill, will yield oil and gas in commercial quantities. In view of the encouraging results obtained by some wells, the district cannot be condemned, for it is conceivable that wells drilled in intricately faulted areas within this district might produce small quantities of oil and gas for a considerable period. However, owing to the structural conditions, even if production is obtained in one well, each subsequent well drilled must be considered a wildcat well with much chance of failure.

Geological map and sections of Southwestern Humboldt County, California, by H. W. Hoots, U. S. Geological Survey.

Character of Late Tertiary Rocks

Sedimentary rocks of late Tertiary age crop out in a comparatively broad belt in the hills adjoining both sides of the lower Eel River valley, in a narrow strip along Bear River, and in isolated patches south of Bear River and farther southeast near Briceland.

Most of these rocks belong to the Wildcat series of Lawson, chiefly of Pliocene age, and consist of 7000 to 11,000 feet of conformable beds of soft light-gray and brown shale and sandstone. These strata are well exposed in the hills south of Ferndale, where the entire series has been divided into two distinct units—(1) a lower unit, consisting of 5500 to 7500 feet of alternating beds of soft light bluish-gray and brown clay shale and fine-grained sandstone, all of which contains considerable glauconite and an abundance of fossils, including Foraminifera; and (2) an upper unit, 2500 to 3000 feet thick, which is composed of soft, well-sorted light-brown fossiliferous, massively bedded sandstone that becomes conglomeratic near the top.

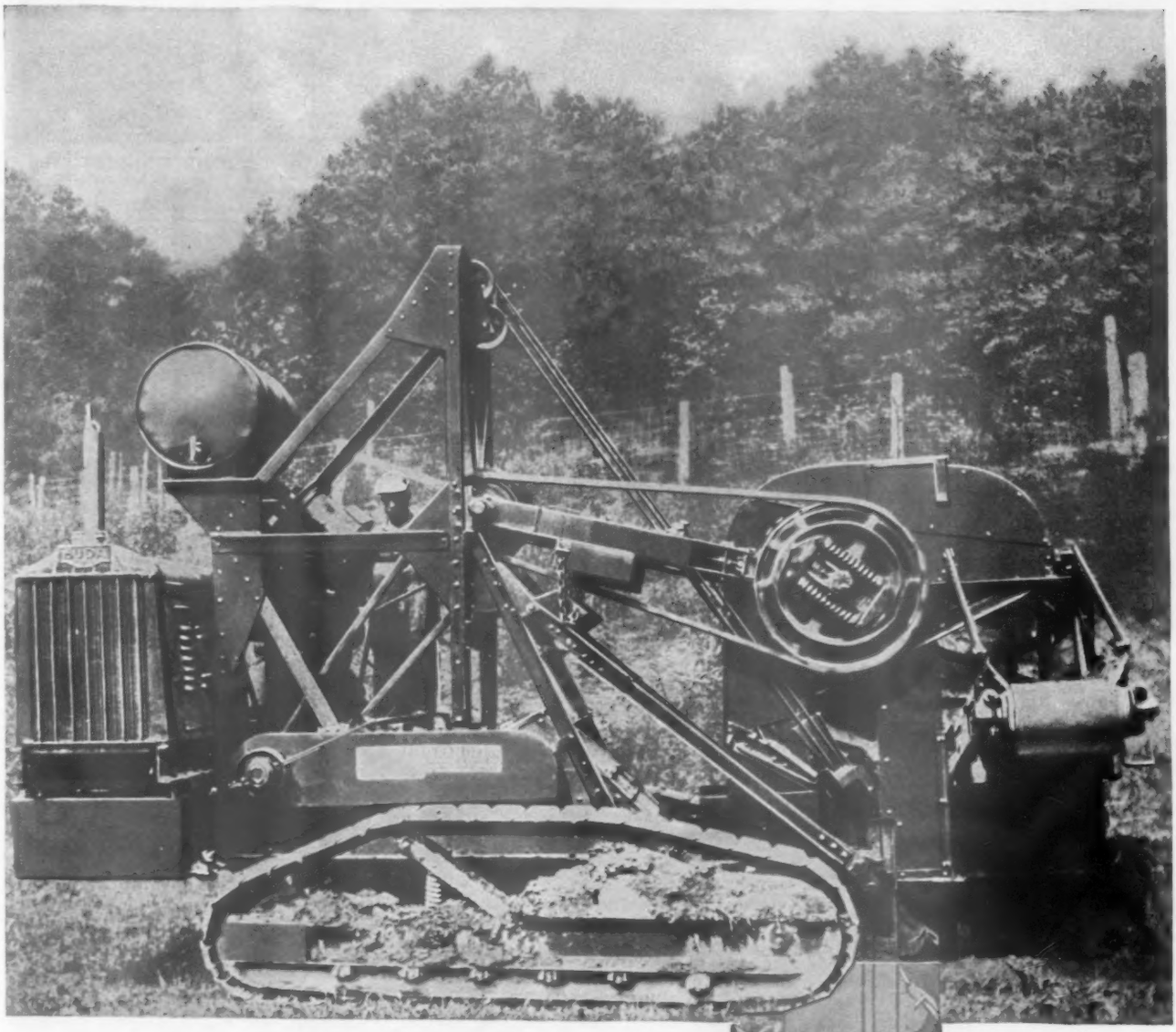
Clay shale along the lower part of Bear River, west of Capetown, is equivalent to a part of the lower unit of the Pliocene, but more steeply dipping beds of similar character farther east along Bear River are shown by the contained Foraminifera to be older, probably of Miocene age.

In the vicinity of Bricealnd, light-gray diatomaceous shale is associated with bluish-gray clay shale which contains foraminifera strongly indicative of miocene age.

Structure of the Late Tertiary Rocks

The late Tertiary rocks of Bear River and along Eel River valley are folded into pronounced synclines. The Bear River syncline extends from a point on the coast half a mile south of the mouth of Bear River eastward to Capetown and probably beyond, although at Capetown and farther east the beds are broken by faults and have very steep dips.

The Eel River syncline, the major



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fold of the region, trends in a northwesterly direction, approximately parallel to the lower courses of Eel and Van Duzen rivers. This fold, like the Bear River syncline west of Capetown, plunges west-northwestward, toward the ocean, and has a more steeply dipping northeast limb.

The late Tertiary rocks of these areas appear to occupy dropped fault blocks, which have acquired their present position as a result of deformation since the Pliocene series was deposited. Post-Pliocene block faulting, accompanied by folding of the Tertiary rocks, is therefore believed to be largely if not entirely the agency determining the present distribution and structure of the Tertiary strata of this region.

These younger rocks are, as a rule, strikingly less deformed and altered than the much older Mesozoic beds, and it is apparent that the relatively gently dipping Tertiary strata rest unconformably upon vertical or nearly vertical Mesozoic strata.

Possibility of Commercial Production From Late Tertiary Rocks

No important seepages of oil and gas are known in the late Tertiary rocks of the Eel River valley. Although these rocks contain scattered calcareous, siliceous, and chitinous remains of marine plants and animals, which may have been the source for a small quantity of hydrocarbons, most of the late Tertiary rock section of this region consists of light bluish-gray clay shale and sandstone that contain only small amounts of organic matter and are devoid of the dark color and other characteristics of rocks which are commonly considered as probable source beds for petroleum. Light-gray and brown diatomaceous shale, which is so common in the oil fields of California and is accepted by some geologists as the source rock for much of California's oil, does not appear to form more than a very small part of the Pliocene and Miocene rocks of Humboldt County. Small amounts of diatomaceous shale occur near Briceland and in the lower part of the Pliocene south of Ferndale.

The absence of seepages and the scarcity of source material in the Tertiary rocks of this region forces the conclusion that there is little indication that these rocks have themselves served as a source for an appreciable amount of oil and gas.

Other conditions, however, may be favorable to the occurrence of commercial deposits of oil and gas in these Tertiary strata. This thick series of beds rests unconformably upon the eroded surface of much older Mesozoic rocks which are known to contain numerous seepages of high-grade oil and gas south of the Eel River valley, in the area drained by Mattole and Bear rivers. It is readily conceivable that considerable quantities of oil and gas may have originated in these older beds and seeped across the unconformity into overlying porous beds of the late Tertiary succession, where, if structural conditions were favorable for large-scale accumulation, oil and gas in commercial quantities might be expected. Thus it seems barely possible that oil or gas has accumulated in subsurface beds of the lower part of the Pliocene which abut against the Bunkerhill fault along the north side of Bear River Ridge, (See structure

Strong shows of methane gas have been encountered and small shows of oil have been reported during the drilling of the Eureka Oil Company's Duff 1, five miles south of Eureka, at 1900 to 2500 feet, in rocks that are apparently Tertiary. As no seepages are known in this district, the findings by this well are the only known indications of oil and gas in the late Tertiary rocks of the Eel river valley.

Structural conditions that can be unreservedly regarded as favorable for the accumulation of economic deposits of petroleum are not known to exist in any part of the area examined. Favorable anticlinal folds may be present, however, in the strip of hills northeast of Eel River (see structure section C-D) and beneath the floor of the lower Eel River valley, where, if present, such folds are partly or completely concealed beneath a surface deposit of alluvium. Along the coast north of the mouth of Eel River the structure of the Pliocene rocks is partly obscured by a veneer of Quatenary clay and sand.

Summary

In view of the geologic structure of southwestern Humboldt County, prospects for the development of large quantities of oil and gas in the region south and southwest of Eel River are not promising. Showings obtained by wells already drilled, however, prove conclusively that small accumulations of high-grade oil and gas exist in the older Mesozoic rocks south of Bear River Ridge and indicate that production on a small scale may be possible. Because of complex structural conditions, exploitation of small deposits of oil in this district will probably be expensive, but it is by no means beyond the bounds of possibility that the Mattole country may, in years to come, yield enough oil from a series of shallow wells to be of some importance.

Oil may exist in the late Tertiary strata in the vicinity of Eel River, but the absence of seepages and other indications in exposed strata of this district is not encouraging. Structural conditions in Tertiary rocks south of the lower Eel River do not warrant drilling for oil at the present time, although there appear to be possibilities for accumulations of oil and gas along the Mesozoic-Tertiary unconformity, against faults, and in possible folds in different parts of the Eel River-Elk River district.

H. N. Cole Dies at Home In Tulsa

Tulsa.—Howard N. Cole, vice president and general manager of the Pure Oil Company's Southwestern producing division, died here Friday, May 4. His death followed an illness of several months, he having been confined to his home, 1512 South Owasso Street, Tulsa, since January.

H. N. COLE

Mr. Cole had been connected with the oil business since 1904, at which time he gave up railroad construction work to go with the Sun Oil Company at Beaumont, Texas. His first work was in the civil engineering department in Humble field. Later he was transferred by the Sun Company to Shreveport, and thence to Wichita Falls. In 1913 he came to Tulsa in charge of operations for the Twin States Oil Company, a Sun Company subsidiary, then beginning development work in Oklahoma. In 1918 he became associated with the Ohio Cities Gas Company, now Pure Oil Company, in the position he held at the time of his death. He was a director of the First National Bank of Tulsa and had a prominent part in the Seminole shut-down.

Mr. Cole's popularity reached further than his Mid-Continent territory. He was well known in South American and European fields.

Mr. Cole was born in 1874 near Kinsman, Ohio, and was graduated in civil engineering from Allegheny College, Meadeville, Pennsylvania. The early athletic records of this school list in several events and places the name of Howard N. Cole. All through his life he was an athletic enthusiast, and a booster for young men. His friends name as his outstanding hobby the aiding of young men to go to college, and several of the younger leaders in the industry today credit him with being responsible for their education and start in the oil business. All that he demanded of them, it is stated, was honesty, backed with sincerity of purpose.

He was a Shriner, a member of the Akdar Shrine in Tulsa, and a member of the Phi Kappa Psi fraternity.

Surviving are his wife of Tulsa, and his father, Charles, and a brother, Harmon Cole, of Kinsman, Ohio. Funeral services were held Saturday afternoon from the First Presbyterian Church, Tulsa.

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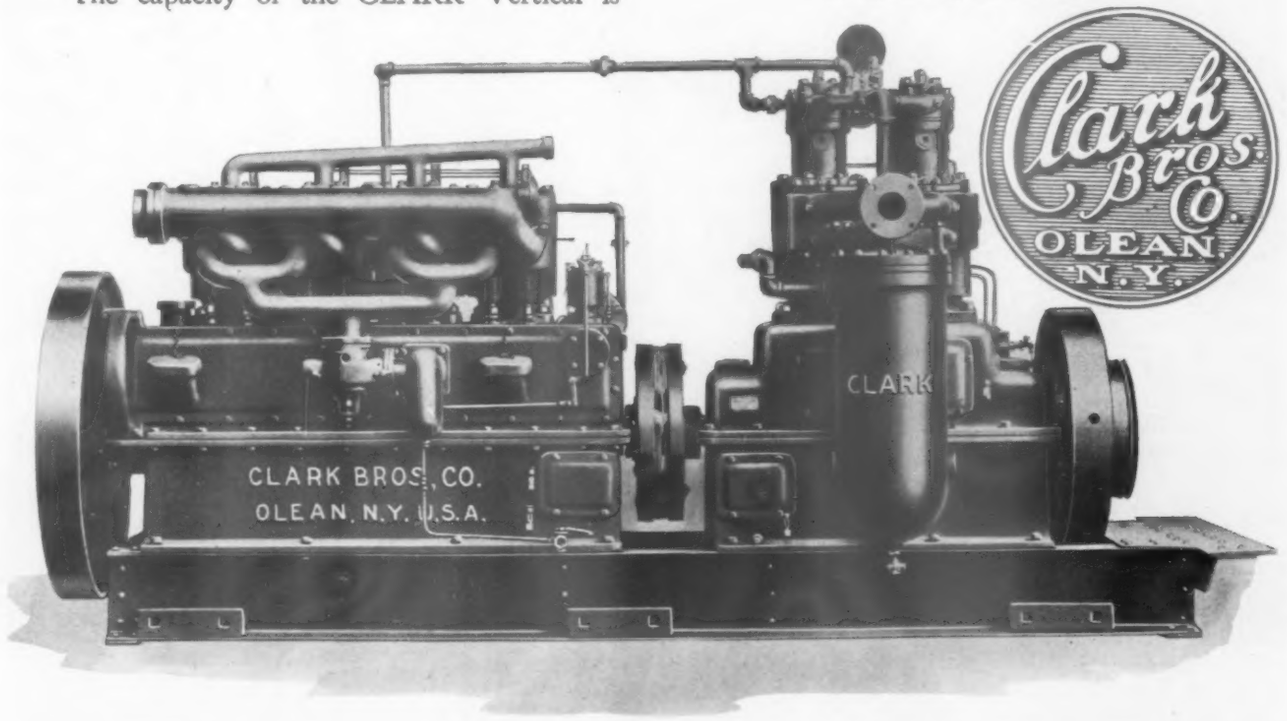

CLARK

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Mountain States Field Development Notes

Ten Million Gas Flow in Oregon Basin Well

Cody, Wyo.—Most interesting development in the new Oregon Basin field in the last week is the discovery of a 10,000,000 cubic foot gas flow in the J. W. Bales well, Section 20-52-100, farther noth than any other well in the field. It is four miles north of the Ohio Oil Company's discovery well and is 2½ miles north of the Producers & Refiners Corporation's operation on the Frisby permit. In one of the upper Wall Creek sands this well had a showing of light green oil at 1115 feet. It is thought now that the well may be saved as a gas well, and another hole started.

Geologists and other experts who have been watching operations closely in the field now believe that there is a third "structural high" located in the western part of the basin on what is known as the Herman L. Garner permit, sections 21-22-27 and 28-51-101.

It is understood, though not authoritatively, that the Fertig interests' contract with the International Refining Company at Sunburst for its crude produced in the field at 52 or 53 cents per barrel, does not have the approval of the United States Geological Survey as the royalty owner.

Orchard Oil Company has completed its well with an initial production of 500 barrels. Total depth is 3890 feet. The next completion in the field will be the Ohio Oil Company's No. 1 Baston, 6-50-100, on the southern structure. The well is drilling in the Tensleep formation and is flowing by heads at the rate of 250 bbls. per day.

Helena, Mont.—Complaint of the Shelby Pipe Line Company against the rates of the Illinois Pipe Line Company has been dismissed by the Montana Railroad Commission. The commission found that the Illinois campany was making no more than a fair return on its investment.

Pondera Acreage Deal

Great Falls, Mont.—A thirty per cent interest in a 4000-acre block on Pondera structure has been purchased by California Petroleum Corporation from Treasurebelt Petroleum Company for a cash consideration which has not been made public. This thirty per cent interest in the leases was taken over recently by the Treasurebelt as the assignee of the old Utah Western, the original operator in the Pondera field. The remaining 70 per cent is owned by Claggett Oil Company, which acquired it from the Utah Western last summer on an operating agreement. With the closing of this deal the Calpet is the second of the larger operating companies to acquire substantial interests in the Pondera field since the completion of the Fulton Petroleum Company's State 1, section 16-27-4w. The George Hirsberg acreage, one mile east of the State 1, was taken over some time ago by Texas Pacific Coal & Oil Company, which is now drilling its first well.

Plan Refinery at Collins

Great Falls, Mont.—Snowcap Refining Company officials have announced the company's intention of building a refinery at Collins when the production of the Bannatyne field shall have reached 500 barrels per day. The Genou Pipe Line Company has already announced its plan for a pipeline from the field to Collins. At present the production of the field is an estimated 175 barrels per day. The new plant will be arranged so that additional units may be added to it as the field's output increases. A. J. Eulberg, president of the refining company, states that the Bannatyne oil shows a gasoline content from one to two per cent less than Kevin-Sunburst crude, and the percentage of sulphur is substantially smaller.

Iles Dome

Denver, Colo.—Oil is forcing its way up through 2400 feet of mud in the joint well of the Shaffer Oil & Refining Company and the Yarg Producing & Refining Corporation on Iles Dome, in Moffat County, Colorado. The location is known as 205, on 26-4n-92w, and the total depth is 3730 feet, bottomed in the Morrison. This well proves more than 4000 acres additional territory to the proved area of the field. It is farther out on the structure than any well which has been drilled to date. When the well is completed, if it is commercial, the Shaffer interests will build a refinary either at Craig or Denver.

Sinclair Taxes Reduced

Casper, Wyo.—Because of a reduction of 15 per cent in the taxation of the Sinclair pipe line in 13 counties in Nebraska, it is stated that the line will not be removed at the present time. Sinclair company has requested a reduction of 50 per cent. The line traverses four counties in Wyoming and for the last several months has been running only about 5000 barrels of oil per day. The line is 720 miles long; in warm weather the oil gravitates from the Sinclair tank farm in Converse County to Kansas City. It is the longest gravity oil line in the world.

Wildcat Work Opens Up In Montana

Great Falls, Mont.—Better weather conditions all over the State have permitted the resumption of wildcat operations in various quarters. One of the most promising structures, East Butte, near Harlem, will have a test drilled by Arab Oil Company. It is reported to have been spudded in, and to be making good progress. This company spent a year in core drill exploration before spotting the location.

Five Point Oil Company has stated that it will spud its test on Pennty-wood structure on May 15. No definite location has been announced.

General Exploration Company has taken over the Allen Oil Company's acreage on Benton Lake structure, 20 miles northwest of Great Falls, and has announced its intention of drilling a well there this spring. This will be the third test on this structure; the first two had showings of both oil and gas, and the second was drilled to 3500 feet and abandoned.

Another test on Flatwillow structure, southwest of section 5-12-25, has been announced by Minnesota-Flatwillow Petroleum Company. No. 1 was abandoned at 1518 feet, after having had good showings in the Ellis sand, and before that in the 950-foot level. Oil was similar to the Cat Creek crude.

Big Horn Oil & Gas Development Company of Hardin has completed its financing for the proposed test for gas which is to be drilled near the town. The company has been granted a franchise to furnish the town with gas for domestic and industrial consumption.

Rawlins, Wyo.—The Producers & Refiners Corporation's deep test in the Ferris field which held out such high promise of proving a new horizon in the Little Lost Soldier district, has turned to sulphur water, and is flowing 5000 barrels per day from 4600 feet. This well was at one time reported to be making 800 barrels of oil from 4011 feet in the Embar sand. Later it was reported to be making some 250 barrels of fluid, of which 100 barrels was a light green oil, testing around 28 degrees, with a considerable sulphur content.

Casper, Wyo.—The Texas Production Company officials are going through the formalities of taking over the management of the California Petroleum Corporation properties in Wyoming and Montana. At present none of the Calpet's properties in the LaBarge field in Southwestern Wyoming are being operated, except those wells which were completed last year. The Wyoming operations will be under the direct supervision of the Casper offices of the Texas Production Company.

Parkersburg

HAS LED THE OIL FIELDS OF THE WORLD FOR THIRTY-ONE YEARS

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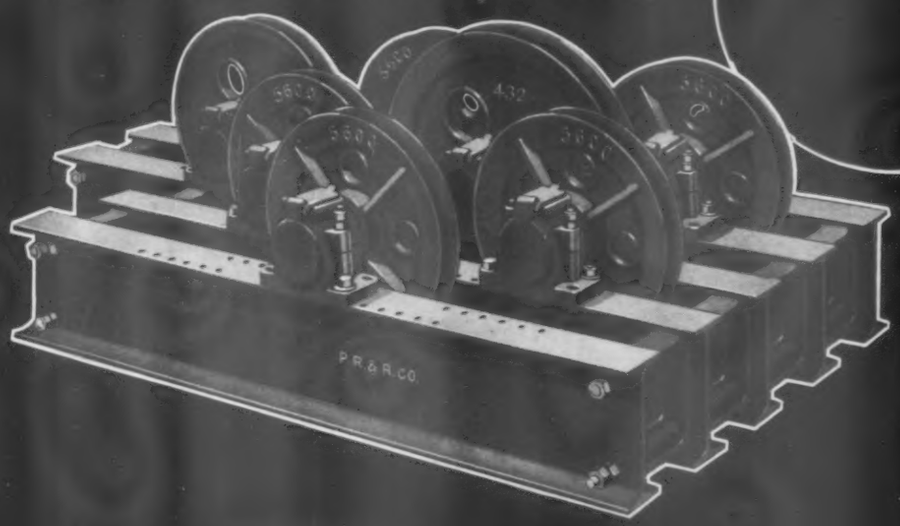

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Say you saw it in The OIL WEEKLY

Install Auxiliary Pumps

Dallas, Texas.—An additional pumping unit is to be added to five of the main line stations on Magnolia Pipe Line Company's system between Corsicana and Beaumont, a distance of 240 miles, in order to afford reserve power for the equipment now delivering about 105,000 barrels of crude daily. A reciprocating pump and electric motor will be added to Corsicana, Simsboro, Brown, Richards and Cleveland stations. Two of these new pumps will be of 30,000 barrels daily capacity, and the other three will be capable of handling 26,000 barrels daily each. Magnolia is adding two new 80,000 barrel capacity working tanks at Brown Station, Leon County, where total storage facilities now amount to 895,000 barrels.

Ventura, Calif.—The Petroleum Securities Company's Diablo 1, section 26-5-10, made a disappointing showing recently when 40 feet of oil sand between 4523 and 4563 feet yielded only a small amount of oil and gas on an open hole test. The company is not satisfied with the test and is running 6⅝-inch casing to a point below the 8⅝-inch string, which is cemented at 4150 feet. The bailer showed a bridge above the oil sand but this has been removed. Diablo 1 is located in an area which has produced some heavy oil, but it is the first test to show a light grade of crude at such a depth.

Kevin Producer Opens Drilling Campaign

Kevin, Mont.—The Lon Crumley well in section 29-35-2w, which came in a few days ago for a 30-barrel producer has opened up quite a block of new acreage, to the extent that at least five wells are planned just as soon as warm weather sets in.

Mr. Crumley says he has witnessed many fantastic tricks of the Kevin Sunburst field, but in this last well he was surprised by another. Usually all the shallow gas sands in the field have been dry but in this well all the gas sands also carried showings of oil.

West Texas Production

WINKLER COUNTY

	Producing Wells	Daily Average Prod.
Hendrick Field—		
Humble Oil & Refining Company	16	*42,000
Roxana Petroleum Corporation	19	*34,935
Atlantic Oil Producing Company	16	*24,595
Atlantic & Collett-O'Keefe	3	*21,850
Cranfill & Reynolds, Inc., et al	4	*20,515
Southern Crude-Dixie Oil Co.	15	*20,260
Gulf Production Company	13	*18,775
Independent Oil & Gas Company	15	13,460
Southern Crude-R. A. Westbrook	13	*12,375
Landreth Prod. Corp. & Roxana	7	10,755
Republic Production Company	5	10,750
Texon Oil & Land Company	4	7,095
Pure Oil Company	10	*7,030
The California Company	8	5,100
Magnolia Petroleum Company	6	2,595
Murchison & Cranfill Bros. Oil Co.	5	875
Llano Oil Co. & Roxana	2	40
Totals	161	253,005

CRANE COUNTY

Church & Fields—		
Landreth Production Corporation	16	7,820
Simms Oil Co.-Atlantic Oil Prod. Co.	31	7,600
Prairie Oil & Gas Company	12	*7,575
Warner-Quinlan Co. of Texas	27	6,405
Tidal Oil Co. & Turman-Maxwell	25	*4,710
Magnolia Petroleum Company	33	3,970
Humble Oil & Refining Company	13	3,770
Gulf Production Company	11	1,720
Independent Oil & Gas Company	7	1,610
The Texas Company	2	190
Church-Fields-Weekly	2	100
Stidham & Thrasher	1	5
Totals	180	45,475
Gulf-McElroy—		
Gulf Production Company	60	15,485
Gulf-Waddell—		
Gulf Production Company	1	20
Marland-Hughes—		
Marland Oil Company	14	400
The Texas Company	10	175
McMan Oil & Gas Company	2	60
Totals	26	635
Totals for Crane County	266	61,615

REAGAN COUNTY

	Producing Wells	Daily Average Prod.
Big Lake Field—		
Big Lake Oil Company	128	14,380
Texon Oil & Land Company	79	4,325
Skelly Oil Company et al	1	40
Totals	208	18,745

PECOS COUNTY

Yates Field—		
Mid-Kansas-Transcontinental Oil Co.	68	*17,775
The California Company	29	*7,445
Gulf Production Company	17	*6,175
Gulf Prod. Co. (Crockett County)	3	415
Roxana Petroleum Corporation	12	*4,690
Humble Oil & Refining Co.	11	*3,780
McMan O. & G. Co. & Marland Prod. Co.	16	*3,650
Simms Oil Company	6	*3,265
Marland Prod. Co.	10	*995
Oil Operators Trust, Inc. (A. T. Herd)	7	*745
Red Bank Oil Company	2	510
McMan Oil & Gas Company	2	*405
Mazda Oil Co. & Savoy Oil Co.	1	300
Grayburg Oil Co. & T. T. Word	3	*250
Kirby Pet. Co. & Edson Pet. Co.	1	140
Skelly Oil Company	1	110
Phillips Petroleum Company	1	105
Kirby Petroleum Company	1	75
Totals	189	50,810

MISCELLANEOUS

Upton County	284	12,860
Howard County	145	*4,130
Mitchell County	139	3,000
Crockett County	35	2,145
Jones County	24	1,350
Fisher County	2	210
Runnels County	2	135
Loving County	2	115
Scurry County	5	35
Ector County	1	15
Totals	639	23,995
Totals for all fields	1,463	408,170
Totals previous week	1,449	374,780

*Production partially pinched.

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CRUDE OIL PRICE QUOTATIONS

CURRENT POSTINGS

EASTERN STATES

	May 9
New York Transit	$2.80
Bradford District	2.80
National Transit	2.65
Southwest	2.65
Eureka	2.60
Buckeye	2.35
Macksburg	2.80
Gaines	2.60
Somerset	1.45
Cabell	1.35
Ragland	.95
Corning, 35-cent grade	1.45
Corning, 25-cent grade	1.55
Keister	1.10

CENTRAL STATES

Illinois	1.50
Indiana	1.32
Lima	1.55
Plymouth	1.23
Princeton	1.50
Waterloo	1.35
Wooster	1.57

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren, All grades	1.50

MID-CONTINENT

Prairie, Sinclair and Gulf

28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
52 and above	1.76

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude

(Humble Oil and Refining Company and Gulf Refining Company)*

	May 9
Below 25 gravity	.76
25 to 25.9 gravity	.81
26 to 26.9 gravity	.86
27 to 27.9 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
52 and above	1.76

*Humble's postings stop at 44 and above, at $1.52.

NORTH AND CENTRAL TEXAS

(The Texas Company and Magnolia Petroleum Company)*

24 to 24.9 gravity	.76
25 to 25.9 gravity	.81
26 to 26.9 gravity	.86
27 to 27.9 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40

	May 9
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
42 and above	1.76

*Magnolia Petroleum Company posts the schedule below on oil below 30 gravity and from 30 gravity up to 31.9. Beginning with 32 to 32.9, Magnolia's posting is the same as that of The Texas Company.

Below 30 gravity	.75
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.05

Corsicana heavy is $1.00 posted by Magnolia

SOUTH TEXAS

Mirando	1.00

SOMERSET

Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

GULF COAST

Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.15
25 to 25.9 gravity	1.17
26 to 26.9 gravity	1.19
27 to 27.9 gravity	1.21
28 to 28.9 gravity	1.23
29 to 29.9 gravity	1.25
30 to 30.9 gravity	1.27
31 to 31.9 gravity	1.29
32 to 32.9 gravity	1.31
33 to 33.9 gravity	1.33
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.37
36 to 36.9 gravity	1.39
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.43
39 to 39.9 gravity	1.45
40 and above	1.47

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

CALIFORNIA CRUDE OIL PRICES AT THE WELL

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated.)

Gravity (degrees)	Signal Hill	Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Whittier La Harbra	Montebello	Coyotte Hill	Santa Fee Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler
14-14-9	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
16-16-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
17-17-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
18-18-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
19-19-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
20-20-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	..	.77	.77	.77	.76	.76
21-21-9	.86	.86	.86	.86	.86	..	.86	.86	.85	.85	.86	.85	..	.79	.79	.79	.77	.77
22-22-9	.87	.87	.87	.87	.87	..	.87	.87	.85	.85	.87	.85	..	.81	.81	.81	.78	.78
23-23-9	.88	.88	.88	.88	.88	..	.88	.88	..	.85	.88	.85	..	.83	.83	.83	.79	.79
24-24-9	.89	.89	.89	.89	.89	..	.89	.89	..	.85	.89	.85	..	.85	.85	.85	.80	.80
25-25-9	.90	.90	.90	.90	.90	.90	.90	.90	..	.86	.90	.86	..	.87	.87	.87	.81	.81
26-26-9	.92	.92	.92	.92	.92	.92	.92	.92	..	.87	.91	.87	..	.89	.89	.89	.83	.82
27-27-9	.94	.94	.94	.94	.94	.94	.94	.94	..	.88	.92	.88	..	.91	.91	.91	.85	.83
28-28-9	.96	.96	.96	.96	.96	.96	.96	.96	..	.89	.93	.89	..	.93	.93	.93	.87	..
29-29-9	.98	.98	.98	..	.98	.98	..	1.00	..	.91	.95	.93	..	.99	.99	.99	.91	..
30-30-9	1.00	1.00	1.00	..	1.00	1.00	..	..	..	..	..	.95	..	1.02	1.02	1.02	.93	..
31-31-9	1.03	1.03	1.03	..	..	1.03	..	..	..	..	..	.97	..	1.05	1.05	1.05	.95	..
32-32-9	1.06	1.06	1.06	..	..	1.06	..	..	..	..	..	.99	..	1.08	1.08	1.08	.97	..
33-33-9	..	..	..	..	..	1.09	..	..	..	..	..	1.01	..	..	..	1.11	.99	..
34-34-9	..	..	..	..	..	1.12	..	..	..	..	..	1.03	..	..	..	..	1.01	..
35-35-9	..	..	..	..	..	1.15	..	..	..	..	..	1.06	..	..	..	..	..	..
36-36-9	..	..	..	..	..	1.18	..	..	..	..	..	1.09	..	..	..	..	..	..
37-37-9	..	..	..	..	..	1.21	..	..	..	..	..	1.12	..	..	..	..	..	..
38-38-9	..	..	..	..	..	1.24	..	..	..	..	..	1.15	..	..	..	..	..	..
39-39-9	..	..	..	..	..	1.27	..	..	..	..	..	..	..	..	..	..	..	..
40-40-9	..	..	..	..	..	1.30	..	..	..	..	..	..	..	..	..	..	..	..
41-41-9	..	..	..	..	..	1.33	..	..	..	..	..	..	..	..	..	..	..	..
42-42-9	..	..	..	..	..	1.36	..											

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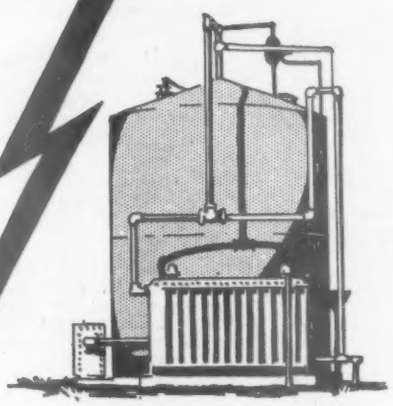

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PETRECO

	May 9 1928
MARKHAM	
The Texas Company	
All grades	1.00
LULING	
All grades	1.00
PANHANDLE	
GRAY COUNTY	
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Refining Company)	
Below 27 gravity	.60
27 to 27.9 gravity	.65
28 to 28.9 gravity	.70
29 to 29.9 gravity	.75
30 to 30.9 gravity	.80
31 to 31.9 gravity	.85
32 to 32.9 gravity	.90
33 to 33.9 gravity	.93
34 to 34.9 gravity	.96
35 to 35.9 gravity	.99
36 to 36.9 gravity	1.02
37 to 37.9 gravity	1.05
38 to 38.9 gravity	1.08
39 to 39.9 gravity	1.11
40 to 40.9 gravity	1.14
41 to 41.9 gravity	1.17
42 to 42.9 gravity	1.20
43 to 43.9 gravity	1.23
44 and above	1.26
WHEELER COUNTY	
(Humble Oil and Refining Company and Magnolia Petroleum Company)	
Below 29 gravity	.60
29 to 29.9 gravity	.65
30 to 30.9 gravity	.70
31 to 31.9 gravity	.75
32 to 32.9 gravity	.80
33 to 33.9 gravity	.83
34 to 34.9 gravity	.86
35 to 35.9 gravity	.89
36 to 36.9 gravity	.92
37 to 37.9 gravity	.95
38 to 38.9 gravity	.98
39 to 39.9 gravity	1.01
40 to 40.9 gravity	1.04
41 to 41.9 gravity	1.07
42 to 42.9 gravity	1.10
43 to 43.9 gravity	1.13
44 and above	1.16
CARSON-HUTCHINSON COUNTIES	
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Refining Company)	
Below 31 gravity	.60
31 to 31.9 gravity	.65
32 to 32.9 gravity	.70
33 to 33.9 gravity	.73
34 to 34.9 gravity	.76
35 to 35.9 gravity	.79
36 to 36.9 gravity	.82
37 to 37.9 gravity	.85
38 to 38.9 gravity	.88
39 to 39.9 gravity	.91
40 to 40.9 gravity	.94
41 to 41.9 gravity	.97
42 to 42.9 gravity	1.00
43 to 43.9 gravity	1.03
44 and above	1.06
WEST TEXAS	
(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*	
Crane- Upton, Crockett, Pecos and Winkler Counties, all grades	.60

*Gulf does not post in Winkler County; Magnolia posts only in Crane and Upton Counties; The Marland Company, post only in Crane, Upton and Crockett Counties; Southern posts only in Crane, Upton and Winkler Counties.

(Magnolia Petroleum Company)	
Mitchell County	$ .80
Howard-Glasscock County (shallow)	.80
Howard-Glasscock County (deep)	.60
Col-Tex Refining Company	
Howard and Mitchell Counties	$ .80
WYOMING-MONTANA	
Wyoming	
Byron	1.33
Ferris	1.60
Elk Basin	1.33
Grass Creek	1.33
Rock Creek	1.25
Lost Soldier	.95
Lance Creek	1.33
Mule Creek	1.10
Notches	.65
Big Muddy	1.25
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.33
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00
Salt Creek	
Midwest Refining Company	
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30
MONTANA	
Sunburst	1.50
Cat Creek	1.33
Lake Basin	2.20
NEW MEXICO	
Artesia	1.00
Hogback	1.38
CANADA	
Oil Springs	2.02
Petrolia	1.95
LOUISIANA-ARKANSAS	
(All Companies)*	
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley**	
Below 28 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
52 and above	1.76

*Shreveport-Eldorado's postings stop at above 40 gravity.

**Below 36 gravity, the posting on Cotton Valley is 75 cents. From 36 to 52 and above the regular gravity schedule is followed.

STEPHENS	
(All Companies)	
Below 28	.85
28 to 28.9 gravity	.87
29 to 29.9 gravity	.89
30 to 30.9 gravity	.91
31 to 31.9 gravity	.93
32 and above	.95
SMACKOVER	
(All Companies)	
Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.75
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Week End'd April 28	Week En'd April 21
AT ATLANTIC COAST PORTS—		
Baltimore	.....	223,000
Boston	.....	77,000
New York	832,000	1,209,000
Philadelphia	125,000	144,000
Others	80,000	*220,000
Total	1,037,000	1,873,000
Daily average	148,143	267,571
AT GULF COAST PORTS—		
Galveston Ditsrict	.....	100,000
New Orleans and Baton Rouge	230,000	169,000
Port Arthur and Sabine District	65,000	.....
Tampa	.....	4,000
Total	295,000	273,000
Daily average	42,143	39,000
AT ALL UNITED STATES PORTS—		
Total	1,332,000	2,146,000
Daily average	190,286	306,571
Daily average four weeks ended	242,429	257,786

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Week End'd April 28	Week En'd April 21
AT ATLANTIC COAST PORTS—		
Baltimore	.....	220,000
Boston	75,000	80,000
New York	90,000	250,000
Philadelphia	80,000	78,000
Others	.....	78,000
Total	245,000	706,000
Daily average	35,000	100,857
AT GULF COAST PORTS—		
Daily average	.....	.....
Total Atlantic and Gulf Coast Ports	245,000	706,000
Daily average	35,000	100,857
Daily average four weeks ended	62,357	59,679
DISTRIBUTION OF TOTAL CALIFORNIA OIL RECEIPTS IS AS FOLLOWS:		
Crude	90,000	174,000
Gasoline	155,000	532,000
Gas Oil	.....	.....
Total	245,000	706,000

*Revised.

When production drops—use ABERCROMBIE SERVICE

All of Abercrombie's experience in cutting out—hundreds of wells —YOURS on a CONTRACT BASIS!

WITH YEARS OF PIONEERING behind us, in the designing, manufacture and use of INSIDE CUTTING TOOLS, is it any wonder that an ABERCROMBIE SERVICE MAN can give you practical knowledge gained through EXPERIENCE, and a greater assurance of success on YOUR cutting jobs?

One of our nine seasoned SERVICE MEN is ready to go to work for you without delay. Wire or phone us today, and he will be on your lease with a cutting tool tomorrow.

Progressive operators have learned that it does NOT pay to experiment on their cutting jobs. They've found from experience that ABERCROMBIE knows how. That is why we have so many repeat contracts from old clients.

Let us do your next cutting job—then you'll realize just what extra satisfaction goes with ABERCROMBIE SERVICE.

J.S. ABERCROMBIE Co.

616-18 West Bldg., Houston, Texas, U.S.A.

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1927	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
January	598,500	117,200	466,400	173,900	52,900	131,550	107,850	84,450	653,450	2,386,200	73,972,150
February	693,350	116,250	479,800	154,600	52,800	128,200	107,150	85,300	642,700	2,460,150	68,884,300
March	710,350	116,100	475,000	154,750	51,450	124,500	104,400	87,600	640,850	2,465,000	76,414,900
April	723,700	115,400	477,300	155,100	50,500	113,350	108,000	89,350	644,550	2,477,250	74,317,750
May	742,200	114,600	488,700	151,300	47,450	112,700	114,000	89,300	633,550	2,493,800	77,307,700
June	768,600	112,200	480,800	151,650	49,150	112,450	111,850	86,050	638,550	2,511,300	75,338,900
July	846,750	107,750	475,800	142,950	56,200	109,900	111,800	86,950	620,700	2,558,800	79,322,300
August	832,900	105,100	483,450	139,350	56,950	104,750	114,600	80,750	621,450	2,539,300	78,717,850
September	797,450	105,200	493,750	142,900	53,450	101,350	110,800	74,500	637,250	2,516,650	75,498,900
October	782,300	105,100	497,900	138,400	51,300	100,450	113,600	73,250	629,000	2,491,300	77,230,000
November	766,900	106,650	501,750	138,100	49,400	97,850	114,900	75,050	623,850	2,474,450	74,233,500
December	720,700	106,150	531,650	138,500	47,200	94,950	111,250	77,150	624,600	2,452,150	76,017,050
1928											
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April 7	627,750	114,500	609,950	123,400	45,050	84,700	104,500	77,000	608,400	2,395,250	16,766,750
April 14	624,800	112,350	600,450	119,100	48,850	85,300	106,000	75,950	609,800	2,382,600	16,678,200
April 21	620,550	111,350	612,650	117,050	47,750	85,200	107,500	79,200	612,500	2,393,750	16,756,250
April 28	609,650	111,000	632,650	114,350	46,500	78,500	109,000	81,150	621,000	2,403,800	16,826,600
May 5	617,100	110,300	672,750	123,750	44,800	84,100	110,500	81,050	622,300	2,466,650	17,266,550
Increase	7,450	.....	40,100	9,400	.....	5,600	1,500	.....	1,300	62,850	439,950
Decrease	.....	700	.....	.....	1,700	.....	.....	100	.....	.....	.....

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	May 5	April 28
Carson County	7,400	7,600
Gray County	18,750	19,550
Hutchinson County	41,500	42,100
Wheeler County	1,000	1,000
Others	150	250
Totals	68,800	70,500

NORTH TEXAS

Archer County	22,500	21,000
Baylor County	100	100
Burkburnett	11,000	11,150
Clay County (Petrolia)	500	550
Electra	12,850	12,750
Iowa Park-KMA	3,500	3,200
Montague and Cooke Cos.	12,300	12,150
Wilbarger	12,000	11,750
Totals	74,750	72,650

WEST CENTRAL TEXAS

Brown County	12,900	12,750
Callahan County	3,700	3,750
Coleman County	1,650	1,700
Eastland-Desdemona	7,750	7,650
Jack County	1,300	1,450
Palo Pinto County	450	450
Shackelford County	9,600	9,500
Stephens County	8,250	8,000
Throckmorton County	1,000	1,000
Young County	8,000	8,250
Others	900	750
Totals	55,500	55,250

WEST TEXAS

Crane-Upton Counties	72,800	74,800
Crockett County	2,700	2,900
Howard County	4,000	3,850
Jones County	1,350	1,300
Mitchell-Scurry Cos.	3,100	3,100
Pecos County	49,700	50,000
Reagan County	18,500	18,800
Winkler County	272,800	230,500
Others	2,000	1,900
Totals	426,950	387,150

EAST CENTRAL TEXAS

Corsicana-Powell	11,750	11,800
Currie	500	500
Mexia	7,400	7,400
Nigger Creek	1,350	1,350
Richland	500	500
Wortham	2,000	2,050
Totals	23,500	23,600

SOUTHWEST TEXAS

Dale	1,100	1,100
Laredo District	6,100	6,200
Luling	13,500	13,600
Lytton Springs	1,450	1,500
Somerset	700	700
Others	400	400
Totals	23,250	23,500
T'tl Tex. (Outside Gulf Coast)	672,750	632,650

TEXAS GULF COAST

Barbers Hill	550	550
Batson	1,500	1,450
Big Creek	1,500	1,400
Blue Ridge	6,900	6,950
Boling	2,400	2,200
Damon Mound	800	1,000
Goose Creek	7,300	7,300
Hull	10,750	10,500
Humble	1,100	1,150
Orange County	4,600	4,700
Pierce Junction	12,000	10,000
Saratoga	1,000	1,100
Sour Lake	3,500	3,450
South Liberty	3,700	3,600
Spindle Top	37,200	32,000
West Columbia	8,300	8,300
Others	3,000	2,300
Totals	106,100	97,950
Texas total	778,850	730,600

OKLAHOMA

North Braman	3,200	2,950
South Braman	1,750	1,800
Blackwell	3,650	3,650
Hubbard	2,850	2,900
Thomas	1,400	1,450
Tonkawa	14,100	14,250
Garber	8,750	8,600
Burbank	35,900	36,700
Osage (outside Burbank)	28,900	28,900
Watchorn	800	800
Cushing	20,350	20,350
Yale Jennings	9,050	9,050
Davenport	2,100	2,150
Bristow Slick	23,900	23,950
North Okmulgee	15,500	15,500
Lyons Deaner	6,550	6,600
Stroud	1,100	1,100
Cromwell	9,850	9,900
Papoose	4,650	4,750
Wewoka	7,300	7,700
Seminole	53,550	54,150
Bowlegs	70,500	72,250
Searight	14,950	15,150
Little River	48,400	38,450
Earlsboro	93,500	93,700
Duncan District	6,550	6,550
Graham	5,800	5,700
Fox	1,700	1,750
Healdton	13,950	14,000
Hewitt	9,000	8,650
Scholem Alechem	13,600	14,100
Others	83,950	82,150
Totals	617,100	609,650

CALIFORNIA

Santa Fe Springs	37,000	37,000
Long Beach	171,500	170,000
Huntington Beach	55,500	55,500
Torrance	18,500	18,500
Dominguez	12,500	12,500
Rosecrans	6,500	6,500
Inglewood	29,000	29,000
Midway-Sunset	73,500	73,500
Ventura Avenue	49,000	49,000
Seal Beach	38,500	38,500
Others	130,800	131,000
Totals	622,300	621,000

KANSAS

Greenwood County	29,750	29,400
Florence-Covert	1,400	1,400
Peabody-Ebling	3,650	3,650
Eldorado-Towanda	14,100	14,100
Augusta-Fox Bush	4,050	4,050
Rainbow	1,650	1,650
Russell	3,100	2,900
Churchill	11,400	11,800
Oxford	16,450	17,100
Others	24,750	24,950
Totals	110,300	111,000

NORTH LOUISIANA

	May 5	April 28
Homer	4,400	4,450
Haynesville	6,300	6,300
Caddo Light	9,850	10,150
Caddo Heavy	3,900	3,850
DeSoto-Red River	4,200	4,150
Elm Grove	600	550
Bellevue	1,050	1,100
Cotton Valley	7,200	8,050
Urania	6,750	7,300
Pleasant Hill	550	600
Totals North Louisiana	44,800	46,500

LOUISIANA GULF COAST

Edgerly	1,100	1,100
Evangeline	1,050	1,150
Lockport	3,950	4,500
Vinton	4,600	4,650
East Hackberry	3,650	1,900
Bayou Boullion	400	500
Sulphur Dome	2,550	2,350
Others	350	250
Total Louisiana Gulf Coast	17,650	16,400
Louisiana total	62,450	62,900

ARKANSAS

El Dorado	5,300	5,300
Champagnolle	6,300	3,300
Smackover Light	7,600	7,150
Smackover Heavy	60,100	57,950
Stephens	1,050	1,050
Nevada	1,400	1,400
Lisbon	2,250	2,250
Others	100	100
Totals	84,100	78,500

MOUNTAIN STATES

WYOMING

Salt Creek	40,050	41,450
Grass Creek	2,600	2,500
Elk Basin	1,100	1,200
Big Muddy	2,750	2,750
Lost Soldier	5,150	5,200
Rock River	2,700	2,650
Lance Creek	750	750
Others	4,950	3,950
Totals	60,050	60,450

MONTANA

Cat Creek	1,800	1,800
Sunburst	9,800	9,500
Others	150	150
Totals	11,750	11,450

COLORADO

Moffats (Craig)	1,600	1,500
Fort Collins	2,900	2,950
Florence	1,450	1,250
Others	900	950
Totals	6,850	6,650

NEW MEXICO

Table Mesa	50	350
Artesia	1,200	1,150
Hogback	500	500
Rattlesnake	450	400
Others	200	200
Totals	2,400	2,600
Totals Mountain States	81,050	81,150

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky. and N. Y.)	110,500	109,000

PRODUCTION SUMMARY

East of Rockies	1,763,300	1,701,650
U. S. Total	2,466,650	2,403,800

What do tubing jobs cost *your* company?

Tubing jobs mean wasted oil.....dirt, discomfort and late hours for the men.....extra men on the payroll..... lost production during the shutdown.....and many other additional expenses. You know what they are and you know what they cost you!

BUT.....do you know that the *Epco Pump* has proved, on thousands of pulling jobs, that *99 out of 100* tubing jobs can be eliminated? Do you know that the *Epco Pump* cuts the cost of pumping all wells because it decreases rod trouble, uses less fuel, gets maximum producton, handles depth easily....in fact most any condition you are apt to encounter. That is why hundreds and hundreds of producers use no other....that is why *Epco* will help you, too!

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The Economy Pump & Oil Tool Co.

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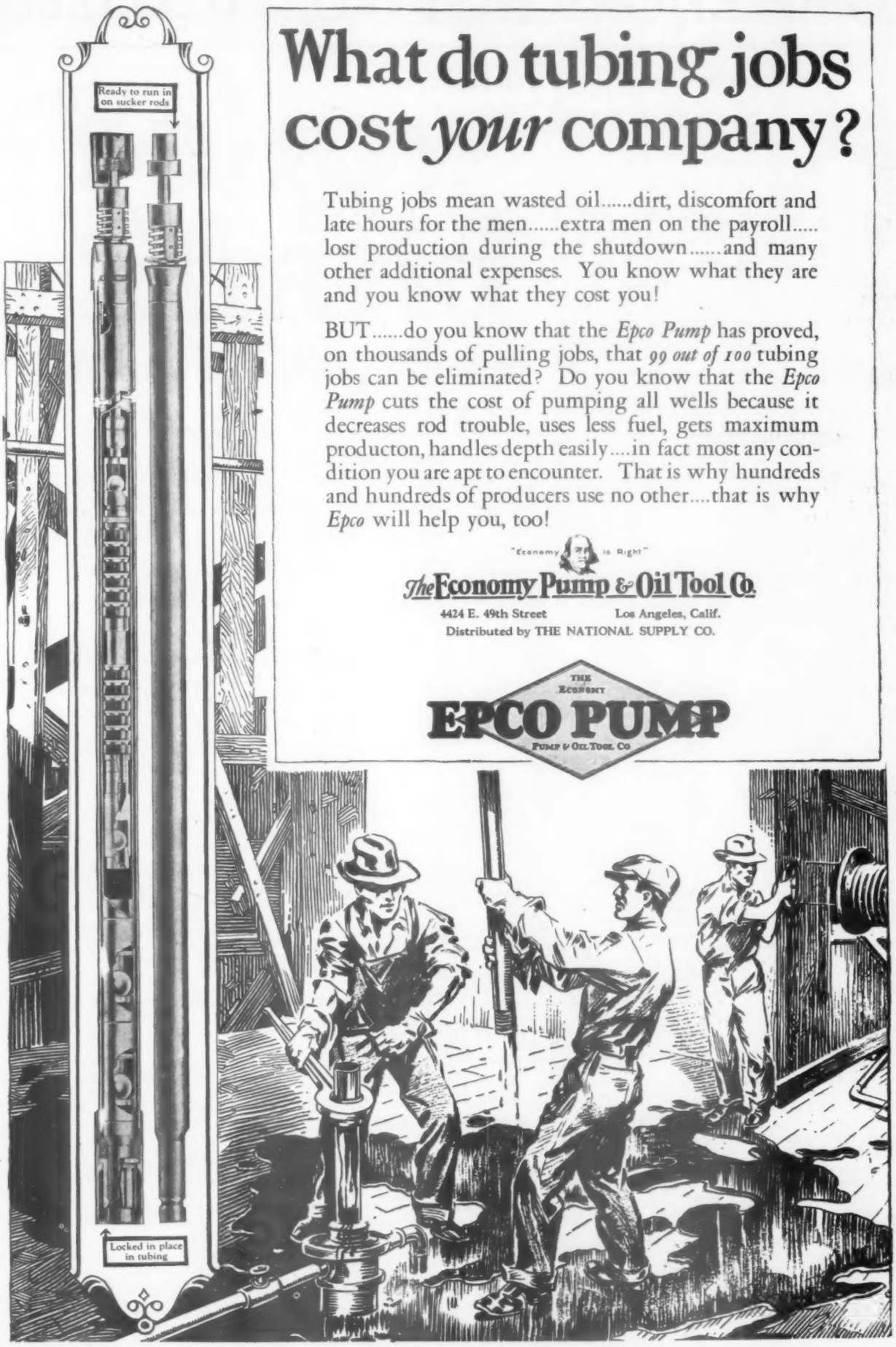
THE ECONOMY

EPCO PUMP

PUMP & OIL TOOL CO



COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	4	4	3	3	..	..	1	1	1,350	166
California	15	8	12	6	..	..	3	2	16,965	8,800
Colorado	1	1	1	1	..	..	..	..	150	80
Illinois	3	..	2	..	..	..	1	..	45	....
Indiana	2	3	1	1	..	..	1	2	8	70
Kansas	17	29	9	14	2	1	6	14	1,735	3,785
Kentucky	38	34	23	19	1	..	14	15	1,088	485
Louisiana	18	16	3	10	7	2	8	4	695	3,485
Michigan	1	..	1	..	..	..	..	..	50	....
Montana	5	6	5	4	..	1	..	1	185	11,640
Ohio	19	37	11	22	6	6	2	9	196	509
Oklahoma	68	77	32	36	17	11	19	30	19,002	9,470
Pennsylvania	1	4	1	..	..	3	..	1	5	....
Tennessee	..	8	..	6	..	..	..	2	....	495
Texas	154	129	82	64	7	8	65	57	81,999	61,623
West Virginia	23	28	8	5	11	14	4	9	185	20
Wyoming	1	3	1	3	..	..	..	..	60	640
Totals	370	387	195	194	51	46	124	147	123,718	101,268
Increase this week	..	..	1	..	5	..	..	..	22,450	....
Decrease this week	17	..	..	..	..	..	23	..	....	....

EASTERN STATES

Company, Well and Location	Initial Production Bbls.	Depth
WASHINGTON COUNTY—		
Paul Clay & Co., Viencak 1	5	....
WEST VIRGINIA		
ROANE COUNTY—		
Richard Elkins & Co., Keene 5	¶1½	....
Godfrey L. Cabot, McQuain 1	¶1½	....
McIntosh & Co., Bower 1	¶¼	....
United Fuel Gas Co., Dickinson	¶1¼	....
Heck Oil Co., Conley 12	¶10	....
PLEASANTS COUNTY—		
Sud Powell & Co., Powell 1	2	....
Riggs-Brown Co., Smith 4	3	....
E. C. Hartman, Mammett Hrs 7	5	....
Dinsmore & Co., Ogden-Rose 4	*	....
CALHOUN COUNTY—		
Hope Nat. Gas Co., Boyles 1	10	....
Godfrey L. Cabot, Ferrell 1	*	....
RITCHIE COUNTY—		
Maxon Oil Co., Parks 2	3	....
Astron Oil Co., Stursburg 10	2	....
MONONGALIA—		
Manufacturers Light & Heat Co., Barrickman 2	¶1½	....
McCracken & Co., Taylor 2	¶2	2600
WETZEL COUNTY—		
R. F. Worden & Co., Midcap 1	150	....
GILMER COUNTY—		
Blaine Engle & Co., Beall 1	¶¼	....
MARION COUNTY—		
Hope Nat. Gas Co., Lawson Hrs 1	¶1	....
LEWIS COUNTY—		
Standard Gas Co., Jackson 1	¶¼	....
HARRISON COUNTY—		
Hope Nat. Gas Co., Lank 1	¶1¼	....
BOONE COUNTY—		
Owens Bottle & Machine Co., Lenning Hrs 2	¶¼	....
DODDRIDGE COUNTY—		
Murphy Oil Co., Coleman 3	*	....
JACKSON COUNTY—		
Producers O. & G. Co., Skeen 1	*	....
KENTUCKY		
ESTILL COUNTY—		
Levy & Co., Stewart 1	*	....
WAYNE COUNTY—		
J. C. Blair & Co., Gregory 4	10	....
CLINTON COUNTY—		
McClintock-Reed & Co., Pierce 11	5	....
CUMBERLAND-MONROE COUNTIES—		
Hunt & Co., Dillon Mill 1	*	....
ALLEN COUNTY—		
S. W. Lowman & Co., Woods 9	2	261
WEBSTER COUNTY—		
Dave Browning, Griffith 1	¶3-25	....
Unknown parties, Rideout 1	¶2	....
HANCOCK COUNTY—		
Tri-County O. & G. Co., Stevens 1	10	....
Lang & Co., McBride 1	*	....
McLEAN COUNTY—		
Young & Murray, Leachman 1	*	....
Edward Murray, Mitchell 1	*	1385
WARREN COUNTY—		
Morrow & Hayes, Morgan 5	6	531
Grace S. Brunson & Co., Lazarous 2	1	500
O. B. T. Oil Co., Deathridge 4	*	1058
DAVIES COUNTY—		
Weideman Oil Co., C. M. Fields 2	120	....
Miller & Damron, Dutch Tompkins 1	35	....
Dug. Bolling & Co., Hazel Miller-Aud 1	20	505
Ohio Oil Co., Roby 2	12	....
Gourney Dev, Baird 1	5	....
S. J. Patrick & Son, Rudy 1	*	1600
OHIO COUNTY—		
Mecca Oil Co., Wells 13	100	....
Wells 14	125	....
Daley & Lowman, Hamilton 3	250	....
Cumberland Pet. Co., Hamilton 7	100	....
Hamilton 8	100	....
James C. Ellis, Keith 4	100	....
Miller & Damron, Ford 2	20	....
C. H. Tremor & Co., Lloyd 1	*	....
BARREN COUNTY—		
Esslinger Oil Co., Morton 5	10	....
White & Sandals, Pedigo 4	20	....
Mayfield 1	6	....
Mayfield 2	6	....
Hunt, Leach & Co., Williamson 1	*	....
R. B. Tyler, Clark 2	*	....
Williamson & Co., Christman 1	*	....
Wood Oil Co., McCoy 1	*	....
Houchins Leashold Co., Seigert 1	*	....
Christensen & Co., Christensen 1	*	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
WASHINGTON COUNTY—		
Yellowhouse O. & G. Co., Davis 1	2	....
Lydia Schneider & Co., Hood 1	¶¼	....
Weir & Schramm, Palmer 1	1	....
JEFFERSON COUNTY—		
A. H. Sutton & Co., Williams 5	25	....
S. H. Boyce & Co., Groves & Co. 1	5	....
MORGAN COUNTY—		
Burns & Co., Maxier 1	¶¼	....

NORTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
SENECA COUNTY—		
T. G. O'Brien, Sentelbatch 1	80	1493
Roose & Milligan, Brubaker 1	*	1533
ALLEN COUNTY—		
W. W. Bolz, Zelno 1	25	1362
B. L. Carmon & Co., Hall 3	10	1403
WOOD COUNTY—		
C. F. Zeising & Co., Briggs 1	*	1284
HANCOCK COUNTY—		
Herman & Bower, Hays 1	¶¼	1255

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
ADAMS COUNTY—		
William Kelly & Co., Briggs 1	8	....
RANDOLPH COUNTY—		
F. E. Reckew, Miller 1	*	....

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
WABASH COUNTY—		
McCoplin Bros. & Co., Kogan 1	10	1439
Adams Corner Oil Co., Wright 1	*	1610
LAWRENCE COUNTY—		
Phipps, Blosser & Co., Clark 1	35	996

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS COUNTY—		
First National Bank, Marietta, Finsterwald 18	3	....
H. O. Bode, Jones 1	¶¼	....
Charles Fox & Co., Dean 1	¶¼	....
PERRY COUNTY—		
Wittmer O. & G. Co., Nelson 1	30	....
Ohio Fuel Supply Co., Brown 1	¶1¼	....
LICKING COUNTY—		
Frank C. Linton & Co., McCullough 1	10	....
HOCKING COUNTY—		
Griffin Producing Co., Thomas 6	5	....

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
MUSKEGON COUNTY—		
A. S. Cochran, Taggert 1	50	1702

MOUNTAIN STATES

COLORADO

Company, Well and Location	Initial Production Bbls.	Depth
Raddatz, Vogel & Travis, ne 28-20-69	150	1950

WYOMING

Company, Well and Location	Initial Production Bbls.	Depth
SALT CREEK—		
Midwest Ref. Co., Wyoming Associated, se 36-40-79	60	1468

MONTANA

Company, Well and Location	Initial Production Bbls.	Depth
KEVIN-SUNBURST—		
Baker-Barnhill-Corey Oil Co., Barger 4, nw 9-34-1w	15	1365
Flickertail Oil Co., Schact 5, nw 33-35-1w	75	....
P. M. K. Oil Co., Kalispell-Kevin 9, se 19-35-1w	40	1513
Ogden-Kevin Oil Co., Zachor 3, sw 20-35-1w	25	1545
56 Pet. Corp., Caine 40, ne 32-35-1w	30	1496

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
HUNTINGTON BEACH—		
J. E. O'Donnell, Treat 1	*	5510
KERN FRONT—		
Brownmoor Oil Co., Cauley 12A	140	2645
LONG BEACH—		
Dabney and Johnson, Leonard 3	1000	5370
Calif. Western Oil Co., T. P. 2	2200	6450
General Pet. Corp., J. J. 5	3600	6813
Crown City Oil Co., Graham	400	6400
George F. Getty, No. 17	2200	6095
Graham Loftus Oil Co., Mack 1	1800	6110
Pan-American Pet. Co., Chaney 2	1400	6157
Richfield Oil Co., Bernstein 1A	1600	6179
Union Oil Co., L. B. C. 20	1500	5880
MIDWAY—		
Standard Oil Co., No. 92, 33-31-24	125	4280
RINCON—		
Pan-American Pet. Co., Hobson Fee 6	1000	3170

LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Magnolia, Matlock 1, 23-25-12	¶33	3075
Northwest L. Gas Co., Barnett 1, 25-23-12	¶42	3076
The Texas Co., Rose 2, 31-23-11	¶35	3075
CADDO PARISH—		
Dixie Oil Co., Robertshaw 91, 14-21-15	95	2702
DE SOTO PARISH—		
Williams et al, Fortson 1, 4-12-11	¶2	765
MOREHOUSE PARISH—		
United Carbon Co., Davis 1, 21-20-4e	¶28	2148
OUACHITA PARISH—		
Pioneer O. & G. Co., Filhiol 1, 11-18-4e	¶3½	2228
RICHLAND PARISH—		
Ruston Drlg. Co., Mulhern 1, 19-16-6e	¶48½	2446

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Rotary Drilling Lines

It's strength you need in a Rotary Line—strength combined with the ability to bend around the sheaves of the crown block without injury.

It is this valuable combination of qualities that causes Yellow Strand Rotary Lines to last longer and be so economical.

The wire for Yellow Strand is drawn to our special specifications in Europe and imported by us. No wonder Yellow Strand Rotary Lines are so good!

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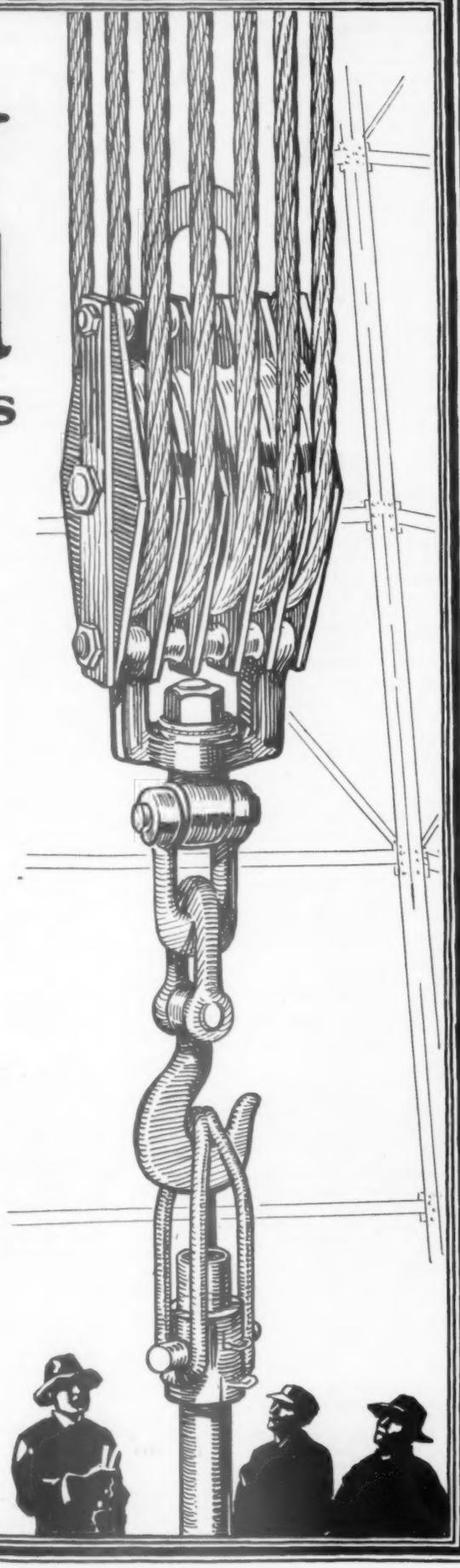


Say you saw it in The OIL WEEKLY

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Sage, Fowler et al, Albers 1, swc se se, 21-25-4e	60	2630
Davis, Hazlett et al, Lewis 5, sec sw sw, 3-27-6e	100	3146
Shawver et al, Nelson 1, nec se, 8-29-8e	*	3118
COWLEY COUNTY—		
Pryor & Lockhart, Drury 2A, nwc ne ne, 31-31-6e	25	2951
Roth & Faurot, Stephens 1, sec sw se, 18-31-5e	*	600
DICKINSON COUNTY—		
McGinnis et al, Willard 1, nwc ne ne, 10-30-12e	*	1656
GREENWOOD COUNTY—		
Empire O. & R. Co., Ott A 8, sec nw nw, 25-22-12e	145	1656
Schwab 11, cnl nw se ne, 25-22-12e	155	1725
Skelly Oil Co., Schwab 1, swc ne, 30-22-13e	450	1732
Schwab 2, nwc ne, 30-22-13e	100	1733
Mendenhall et al, Grossart 1, nec nw sw, 5-25-13e	¶6	1493
Cross et al, Scott 1, nec nw, 18-24-12e	*	....
MORRIS COUNTY—		
Frank et al, Malkins 1, nwc se	*	....
RUSSELL COUNTY—		
Wilcox O. & G. Co., Munsell 4, swc, 17-12-15w	¶7	2046
STAFFORD COUNTY—		
Harper et al, Siffers 1, nwc sw ne	*	4176
SUMNER COUNTY—		
Roxana Pet. Corp., Barnes 4, sec sw sw sw, 14-32-2e	500	2127
Ramsey et al, Caldwell 2, nec, 22-32-2e	200	2195

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
BEAVER COUNTY—		
O. H. Bonner et al, Maple 1, c se ne, 22-2n-25e	*	....
CARTER COUNTY—		
Magnolia, Hefner 2, sw ne sw, 33-1s-3w	60	3768
Cox & Hamon, Vorhees 1, sw se nw, 23-1s-3w	210	2436
Magnolia, Bell 2, sec sw, 13-1s-4w	120	3015
CIMARRON COUNTY—		
J. G. Phillips, State Land 1, se ne ne, 24-6n-2e	*	4370
Ramsey Pet. Co., School Land D 1, c se, 34-4n-1e	*	4306
COTTON COUNTY—		
Magnolia, With-Ke-Bitty 1, swc ne, 30-1s-9w	¶3	2175
Hurley et al, Dorrance 1A, cwl se sw, 19-1s-9w	*	2175
CREEK COUNTY—		
J. Winemiller, Dee Nun 3, nwc se se nw, 4-17-11e	20	1910
Haddock et al, Cook 1, sec ne, 14-18-9e	¶9	2815
Roxana et al, Clark 3, sec ne nw, 18-19-9e	¶1	2350
Tidal Oil Co., Roberts 1, nwc se, 20-17-7e	130	2780
Shaffer O. & R. Co., L. Tiger 4, swc nw, 17-17-7e	317	2849
T. J. Wood et al, Charcotenns 3, nec nw se, 21-17-9e	*	2985
Roxana Pet. Corp., Yarhola 1, swc nw nw, 11-17-9e	*	1977
Sunray Oil Corp., Billie 1A, sec sw sw, 7-19-12e	*	2342
Madden & Madden Oil Co., Watson 1, swc nw sw, 20-16-8e	*	3950
Magnolia, Cornelius 1, swc ne ne, 3-16-7e	*	3677
GARVIN COUNTY—		
Magnolia, Cowan 28, se sw ne, 15-1n-3w	*	1770
GRADY COUNTY—		
Magnolia, Heathley 3, sw nw ne, 2-4n-8w	¶32	2400
Okla. Gas Utilities Corp., Sanford 4, sw se sw, 23-5n-8w	¶20	2355
GRANT COUNTY—		
Okla. Northern Utilities Corp., Coffelt 1, c nw se, 2-27-3w	¶11	4738
JEFFERSON COUNTY—		
Carter Oil Co., Jones 5, sec nw ne, 33-6s-5w	15	1186
KAY COUNTY—		
Blackwell O. & G. Co., Kumler 5, c sw se, 9-27-1w	250	3600
Nehr Oil Co., School Land 1, c nw se, 36-28-1w	¶1	773
MUSKOGEE COUNTY—		
Towner & Witt, Townlot 1, sec ne sw, 6-14-19e	17	522
E. Mills, Townlot 1, se ne sw, 6-14-9e	40	536
J. L. Dixon, Davis 5, nw ne nw, 12-14-18e	¶2	949
P. Boyle, Barnett 5, c n½ se, 8-15-15e	50	1630
Mitchell Oil Co., Barnett 2, sec sw sw, 35-16-15e	¶2	1132
J. Paul et al, James 3, swc nw sw, 17-14-17e	*	1455
J. O. Tilley, Sykes 1, sec ne se se, 33-15-19e	*	548
OKFUSKEE COUNTY—		
Atlantic Oil Prod. Co., Simmer 2, sw ne se, 11-10-11e	175	2072
G. Umbrum, Tiger 2, ne se se, 35-11-11e	¶6	2540
OKMULGEE COUNTY—		
X. K. Stout, Phillips 2, cnl nw nw, 20-16-14e	6	1757
Lavery & Farrell, Carter 1, nwc se se, 10-15-14e	*	1700
OSAGE COUNTY—		
I. T. I. O. Co. 6, nw ne nw, 1-21-8e	15	2358
Peters Pet. Co. et al, nwc se, 32-24-9e	10	1560
Kay County Gas Co. 2B, c nw se, 22-24-7e	¶12	1208
Kewanee O. & G. Co. 11, sw se nw, 34-27-6e	20	2904
Carter Oil Co. 9, sw ne se, 3-26-6e	120	2814
PAWNEE COUNTY—		
Privett Drlg. Co., Houston 1, swc se ne, 10-20-6e	10	3148
PONTOTOC COUNTY—		
Shaffer O. & R. Co., Gilcrease 1A, nwc ne, 36-5n-7e	100	2304
I. T. I. O. Co., Taylor 1, nw sw se, 29-5n-5e	105	2615
POTTAWOTAMIE COUNTY—		
Gypsy Oil Co et al, McGee 1, ne se ne, 23-7-4e	1673	4284
Superior Oil Corp., Cloude 1, sw nw nw	¶17	3775
Central National Oil Co., Tony 1, swc 28-10-4e	*	4323
SEMINOLE COUNTY—		
Louisiana Oil Ref. Co., Reed 4, nw ne ne, 18-5n-8e	450	2613
The Texas Co., Hyde 3, se ne se, 7-5-8e	¶25	2617
Mid-Continent Pet. Corp., Fleet 4, ne se se, 7-5-8e	255	2734
Gypsy Oil Co., Canard 1, se ne en, 22-7-6e	3562	4205
Renton 1, nw ne ne, 11-7-6e	1207	4243
Denmark 1, nw sw se, 11-7-6e	4016	4300
Barnsdall Oil Corp., Sango 4, sw se nw, 1-9-5	30	3586
Sango 6, nw sw nw, 1-9-5	2061	4571
Carter Oil Co., Davis 5, nw se ne 4-9-6	500	4431
Magnolia, Rhodes 5, sw ne sw, 12-8-6	360	4323
Cruse 2, sw se se, 2-7-6	950	4151
T. B. Slick, Barrett 1, ne se nw, 13-5-6e	*	3998
Magnolia, Vierson 1, sec nw, 5-6-7e	*	4535
T. Atkins, Grayson 1, sec sw, 9-9-8e	*	3871
STEPHENS COUNTY—		
Magnolia, M. Green 4, sw se nw, 13-1s-4w	2148	2859
Skelly Oil Co., Krebgs 5, sw nw se, 13-1s-4w	¶22	2995
Amerada Pet. Corp., Hanson 1, ne se sw, 12-1s-4w	¶36	3028
Humble, Perkins 2, swc se, 12-1s-4w	¶60	2740
TEXAS COUNTY—		
Hydraulic Oil Co., Hitch 1, nec, 26-1n-15e	*	600
TULSA COUNTY—		
The Texas Co., Grayson 1, swc nw ne, 28-19-10e	*	2330
WAGGONER COUNTY—		
C. R. Cane, Cane 3, nwc ne se, 35-17-17e	¶7	884

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY—		
Little Fay Oil Co., Robertson 6, 25-15-16	25	2067
UNION COUNTY—		
Oilwell Corp., Dumas 1, 11-17-14	1290	3239
Roxana Pet. Corp., Murphy 1, 9-16-15	35	2396

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
EDGERLY—		
Green Oil Co., Read 1	*	4000
VINTON—		
Gulf, Star-Vincent 45	100	3050

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BATSON—		
Hill & Dowell, Milholme 96	20	1300
BLUE RIDGE—		
Watts Bros., Blakely 3	300	3680
Sinclair O. & G. Co., Davison 3	500	3550
GOOSE CREEK—		
Port City Oil Co., Addey 2	65	2090
HULL—		
Gulf, Phoenix Dev. Co. 20	¶	3045
Republic Prod. Co., Dolbear 56	400	2780
Dolbear 77	130	2375
PIERCE JUNCTION—		
Rio Bravo, P. S. "A" Settegast	800	3825
SARATOGA—		
Rio Bravo, Jardit 83	90	1160
Paggi Bros., Queen City 45	15	1200
SOUR LAKE—		
Theis Oil Co., Merchant 3	*	1970
SPINDLE TOP—		
Gulf, Jeanette Mann 1	*	4215

TEXAS

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
GRAY COUNTY—		
Danciger O&R Co., Crank 1	190	3325
Donley-Gray Oil Co., Gordon 1	*	4155
Ray & Plains Drilling Co., Chapman 1-A	*	2933
Sullivan et al, Cobb 1	¶15	2550
The Texas Co., J. E. Williams 1	¶55	2592
WHEELER COUNTY—		
Hatcher et al, Fee 3	¶35	1487

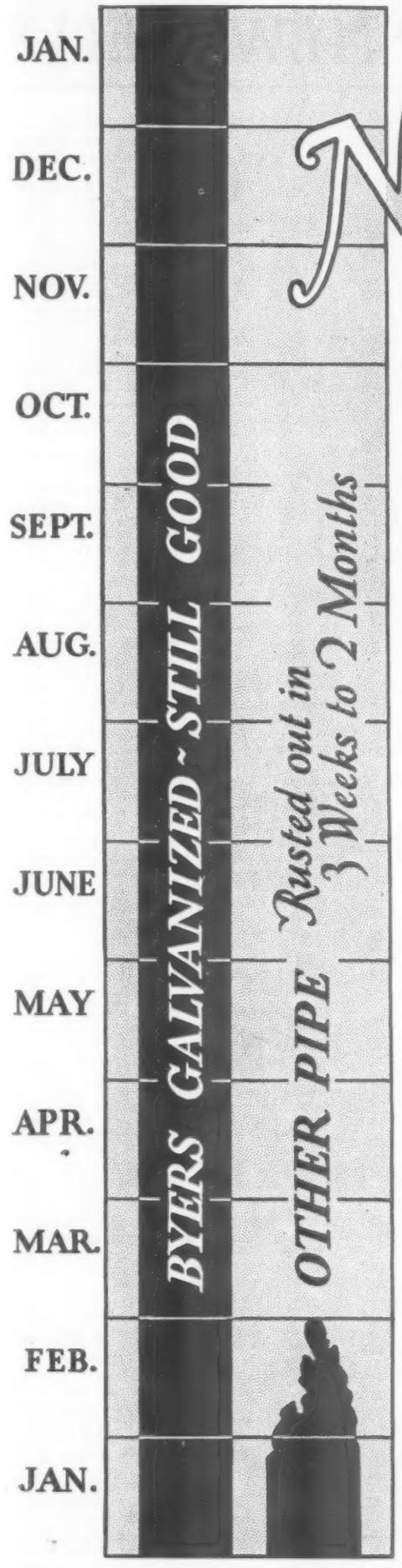
WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HOWARD COUNTY—		
Magnolia Pet. Co., Dora Roberts 3	3000	3020
Roberts-Magnolia 1	40	1874
MITCHELL COUNTY—		
Magnolia Pet. Co., Mary Foster 5	*	3150
PECOS COUNTY—		
The California Co., M. A. Smith 2 (Lse. 1)	700	1652
McMan O&G Co., M. A. Smith 1-A	15,000	1218
M. A. Smith 1-B	5000	1230
WINKLER COUNTY—		
Atlantic Oil Prod. Co., Grisham-Hunter 7	2000	3040
Grisham-Hunter 8	1680	3038
Ida Hendrick 5-D	9000	2927
Atlantic & Collett-O'Keefe, T. G. Hendrick 4-F	2000	2750
Gulf Prod. Co., T. G. Hendrick 9	140	3025
T. G. Hendrick 13	8040	3014
Humble O&R Co., Grisham-Hunter 8	500	2915
Independent O&G Co., Cowden-McCabe 1	500	3061
Marland Prod. Co., Hendrick 1	8000	2760
Pure Oil Co., Grisham-Hunter 1-C	15,000	2701
Southern Crude-Westbrook, Hendrick 1-K-T-88	4500	2876

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Barnsdall Oil Co., Wilson 5-A	120	1713
C. P. Burton et al, Parrish 1	*	1606
R. I. Carter et al, Parkey 4-B	*	1717
Consolidated Oil Co., Kinder 1	*	1325
Fain-McGaha & United Prod. Co., Wilson 9-B	65	1572
D. O. Johnson et al, Wilson 6-B	160	1569
Panhandle Ref. Co., Farmer 1	*	1601
Panhandle & Johnson, Garvey 3	15	780
Pelwin Oil Co., Chancellor 1	*	1561
Petroleum Prod. Co., et al, Wilson 4-E	55	1584
Wilson 5-E	40	1572
Shasta Oil Co., Wilson 1	*	1610
The Texas Co., Coleman 1	*	1502
CLAY COUNTY—		
Lone Star Gas Co., Holloway 26	*	1707
COLLIN COUNTY—		
Verona Prod. Co., Watkins 1	*	1607

(Continued on page 96)



Now for better TUBING

In the Breckenridge Pool in North Texas, Byers galvanized tubing is used extensively. It has replaced cheaper pipe which was formerly used in this field, and so far has lasted on the average of five or six times longer than other tubing.

In West Texas, with extremely high sulphide concentration, Byers galvanized tubing is rapidly replacing other tubing, and has proven very satisfactory.

In numerous other fields, where excessive tubing corrosion exists, Byers galvanized tubing has outlasted cheaper materials many times over, setting most remarkable records in rust resistance.

Galvanizing Sticks to Byers

One reason why Byers galvanized tubing lasts so much longer than other tubing is that it not only has a much heavier coating, but still more important—the zinc adheres firmly to the base metal. The one common weakness of coatings applied on a smooth metal surface—like steel—is that they have a tendency to peel or flake off. Byers pipe, being made of genuine wrought iron, when "pickled," before galvanizing, becomes deeply etched, like old weathered lumber. This rough surface forms an excellent anchorage for the zinc coating. Byers can be cut, threaded, bent, gripped with wrenches and abused in every way without the zinc peeling off. See photos below. Make this test yourself.

A. M. BYERS COMPANY
Established 1864 Pittsburgh, Pa.

DISTRIBUTORS
Oil Well Supply Co. Jarecki Mfg. Co. International Supply Co.

Ask for further information about service given by Byers galvanized tubing.

Byers galvanized pipe hammered flat, without showing tendency of coating to flake or peel off.

Steel pipe submitted to same test as shown above. Note how galvanizing comes off in big flakes.

BYERS GALVANIZED Tubing
GENUINE WROUGHT IRON

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending May 5	Prev. ious week	Total this month	Total this year	This week last year	This month 1927	Total same date 1927	Year total 1927
Arkansas	8	19	8	81	4	4	154	329
California	18	33	18	364	36	36	582	1,226
Louisiana	13	13	13	253	14	14	212	812
Kansas	26	24	26	414	7	7	438	972
Oklahoma	66	71	66	1,104	79	79	1,618	3,702
Texas	203	174	203	2,635	187	187	4,006	8,665
Mt. States	..	..	..	..	2	2	263	494
Totals	334	334	334	4,851	329	329	7,273	16,149

OKLAHOMA

BECKHAM COUNTY—M. T. C. Oil Co., Abbott 1A, nec, 35-9n-22w.

CARTER COUNTY—Cotton Belt Pet. Co., Rexroat 7, nwc ne sw, 10-4s-2w. Boring et al, Walker 4, swc se nw, 10-4s-2w; Walker 1, nwc sw, se nw, 10-4s-2w. Wirt Franklin Pet. Corp., Drake 1, nwc sw, 7-1s-3w.

COTTON COUNTY—Cullum et al, Chalmers 1, nwc se, 2-2s-10w. Jenkins et al, Smith 2, nec se sw se, 34-1s-10w.

CREEK COUNTY—Tidal Oil Co., Robinson 1, nec sw, 20-17-7e. Twin State Oil Co., Coachman 1, swc ne, 20-17-7e. H. H. Taylor et al, Oglasby 1, nec nw sw, 9-19-9e. Bartlett et al, Miller 2, nec nw nw, 33-18-9e. C. G. Tibbens, Jackson 3, nec sw, 4-18-12e. Musselman et al, Pickett 5,c ne sw, 33-17-11e. Devonian Oil Co. and L. C. Wheeler, Pickett 1A, sec nw, 3-16-11e. Creekmore et al, Gilles 2, sec nw nw, 14-16-11e.

GRADY COUNTY—Meridian Gas Co. Serrata 1, ne nw sw, 25-5n-8w.

JEFFERSON COUNTY — Magnolia, McKenzie 1, ne sw se, 23-5e-6w.

KAY COUNTY—Gypsy Oil Co., Gardner 4, sw ne sw, 28-25-1w. Martin et al, House 1, nec sw, 32-27-1w. Industrial O. & G. Co., Deefner 1, c sw ne, 2-27-1w. Industrial O. &. G. Co., Wrihgt 1, c sw sw, 1-27-1w.

LOGAN COUNTY—Sinclair O. & G. Co., Murphy 1, swc se, 17-19-4w.

MUSKOGEE COUNTY—W. R. Sommerville, nwc se ne se, 4-13-19e. Douglas Drlg. Co., Lee 1, swc nw, 7-14-19e. C. M. Whaley et al, Crittenden 2, swc se ne, 6-14-19e. Hale-Ford Oil Co., Clark 6, cwl e½ nw se, 6-14-19e. B. B. Wheeler et al, Price 1, nwc ne sw, 4-14-19e. H. E. Morrison et al, Drake 1, csl sw ne, 12-14-18e. Hale-Harris et al, Callahan 1A, sec sw nw, 11-14-18e. M. S. Musselem, Franklin 5, csl sw sw, 22-14-16e. Tidal Oil Co., Sander 9, nwc se sw, 34-15-18e. M. S. Musselem, Townlot 1, swc se se, 28-15-18e. W. R. Somerville, Coleman 1, sec nw sw, 18-15-15e. Bryan & Emery, Barneett 2, swc se ne, 8-15-15e. P. Boyle, Barnett 7, nwc ne se, 8-15-15e.

OKMULGEE COUNTY—G. H. Loweree et al, Eubanks 1, sw ne ne, 17-13-14e. M. S. Musselman, Flint 16, cwl ne sw, 26-14-14e. J. E. Wallace, Colbert 9, nec nw se, 14-14-14e. Florine Drlg. Co., Grayson 1, nec, 11-11-12e. Wheeler, Kramer et al, Morgan 3, cel ne nw, 23-13-11e. DeWitt-Baldrige Oil Co., Cooper 1, swc se se, 35-16-3e.

OSAGE COUNTY—Osage Syndicate, Inc. 11, nec se sw nw, 7-21-9e. Phillips Pet. Co. 4, sw nw nw, 1-25-11e. I. T. I. O. Co. 7, swc ne, 26-25-9e. Petroleum Drlg. Co. 22, se nw sw, 25-26-8e. Lewis Prod. Co. & Oliphant 1, nec, 22-26-6e. Phillips Pet. Co. 2, se sw sw, 1-27-5e.

PONTOTOC COUNTY—O. K. Portland Cement Co., Starritt 1, nw ne se,23-4n-7e. Roxana Pet. Corp., Oliver 1, sw se nw, 32-5n-7e. LaSalle Oil Co., Copeland 4, c e½ sw, 28-5n-5e.

POTTAWATOMIE COUNTY—Westheimer & Daube, McKay 2, nw sw nw, 24-7-4e. Superior Oil Corp., Cloude 2, sw nw nw, 2-7-4e. Independent O. & G. Co. & Darby Pet. Co., Freid 2, se ne ne, 23-7-4e. Pierce Pet. Corp., Davis 3, swc ne, 24-7-3e.

SEMINOLE COUNTY—Blackwell O. & G. Co., Bennett 1, sw nw se, 11-7-6e. Continental Oil Co., Cosar 6, nec nw, 35-8-6e; Cosar 1, sec sw, 25-8-6e. Magnolia Pet. Co., Sparks 9, nwc sw, 11-9-5e.

STEPHENS COUNTY—Pet. Producers Co., Brown 2, nwc sw sw nw, 7-2s-7w. Geo. Pace, Massey 1, nwc se, 14-2s-8w. Pace et al, Wilson 2, sec ne se ne, 12-2s-8w. C. R. Smith, McCollom 1, nw ne se, 25-1s-4w. Humble O. & R. Co., Peddycourt 5, ne se ne, 25-1s-4w. Magnolia Pet. Co., Green 6, ne ne nw, 13-1s-4w. Faucett & Holmes, Johnson 1, nwc se sw, 18-1s-8w.

TULSA COUNTY — Ellen O. & G. Co., Island 4, ne nw ne, 25-18-14e. Glidden Oil Corp., Wray 1A, swc nw, 35-19-13e.

KANSAS

BUTLER COUNTY—Allison & Fitzwilliams, Pierce 2, nwc ne ne, 28-25-4e. Davis, Hazlett et al, Lewis 6, swc se sw, 3-27-6e. Garden et al, Sluss 2, sec ne nw, 6-27-6e. Dixie Oil Co., Marshall 2, nec nw nw, 10-27-6e.

COWLEY COUNTY—The Texas Co., Hittle 4, nec se, 21-31-4e. Elliott et al, Elliott 2, nw se ne, 17-31-5e. Roth & Faurot, Bement 1, nwc, 21-31-5e. Skelly Oil Co., Blackley 1, sw nw se, 31-31-6e. Barnsdall Oil Corp. Wagner 1, se sw se, 6-33-3e. Gypsy Oil Co., Jennings 1, sec nw sw nw, 8-33-3e.

GREENWOOD COUNTY — Rhodes et al, Barnard 1, sec sw ne, 33-22-10e. Empire O. & R. Co., Ott 9 "A", swc ne nw, 25-22-12e; Schwab 12, nec sw ne, 25-22-12e; Schwab 5 "A", sec ne sw, 30-22-13e. Polhamus et al, Gopher 1, swc se sw, 35-25-10e. Smith & Downard, Dickinson 1, sec ne ne, 30-25-12e. Brinegar et al, Lawrence 1, nwc, 10-27-13e.

McPHERSON COUNTY—Sinclair O. & G. Co., Clark 1, c ne se, 31-18-2w.

MARION COUNTY—Glidden et al, Riffel 1, sec sw sw, 10-17-4e. Phillips Pet. Co., Ireland 1, nec nw se, 7-19-4e.

RENO COUNTY—Empire O. & R. Co. & Marland Oil Co., Williams 1, sec ne, 5-26-4w.

RUSSELL COUNTY—Keys Pet. Co. et al, Mermis 1, nec se, 32-13-15w. Keys Pet. Corp., Mermis 2, nwc ne se, 32-13-15w.

SUMNER COUNTY—Palmer & Barnsdall Oil Corp., Weinrich 8, sec ne nw nw, 23-32-2e; Weinrich 9, cwl ne nw, 23-32-2e. Wentz Oil Corp. et al Crane 1, sec ne nw, 23-34-2w.

TEXAS

ARCHER COUNTY—Shasta Oil Co., Wichita Falls, Wilson 1, BBB&C sur, 150 ft from s and e lines. E. R. Marts, Dallas, Prideaux 1, blk 9, McMullen sur, 1250 ft from w and 150 ft from s line. Dale O. & R. Co. et al, Wichita Falls, Hutchinson 1, blk 123, Amer. Trib. sur, 150 ft from n and e lines. Magnolia, Dallas, Parkey 1, S 11, blk 3, H&TC sur, 150 ft from n and e lines. W. J. Grisham, Wichita Falls, Taber 1, D. S. S. L. sur, 150 ft from n and w lines. C. W. Gilliland, Wichita Falls, Niemeyer 1, 2415, TE&L sur, 150 ft from n and w lines. Archer & Smith, Amarillo, Garvey 1, BBB&C No. 2 sur, 150 ft from w and 450 ft from s line. L. T. Burns, Wichita Falls, Ikard 1, J. J. Young sur, 150 ft from s and w lines. Fain-McGaha Oil Corp., Wichita Falls, Wilson B 9, blk 20, Gerladine sur, 300 ft e of 8. Tidal Oil Co., Fort Worth, Turbeville 4, S 152, R. Carson sur, 150 ft from s and w lines. Sam Kruger et al, Wichita Falls, Andrews 1, SA&MG sur. Frank Hutcheson, Archer City, Hutchinson 2, J. Ostane sur, 750 ft from n and 450 ft from w line. Bridwell Oil Co. & Cranfill & Johnson, Wichita Falls, Wilson 3, blk 12, Amer. Trib. sur, 282 ft n of 1. Petroleum Prod. Co., Wichita Falls, Wilson E 4, blk 13, Geraldine sur, 282 ft n of 1. Dr. C. W. Wallace, Wichita Falls, Kemp & Kempner B 2, blk 77, W. V. F. L. sur, 450 ft from w and 150 ft from s line.

BROWN COUNTY — Phillips Pet. Corp., Bartlesville, Okla., Hickman 10, C 783, T. Benson sur, 446 ft s of 7. L. G. Bradstreet, Fort Worth, Stout 11, No. 155, W. B. Smith sur, 300 ft e of 8. Baker, Hodges & Superior Oil Corp., Brownwood, Cross 3, J. Kinney sur, 300 ft s of 1. Charter Oil Co., Brownwood, Byler 5, S 43, T&NO sur, 150 ft e of center of w line. J. C. Van Bebber, Brownwood, Mullins 1, 150 ft from n and e lines. Little Flower Oil Co., Brownwood, Green 23, G. W. Huffman sur, Amerada. Amerada, Cisco, Graham 1, blk 4, No. 137, J. Brown sur, 1799 ft from e and 1920 ft from s line; Plummer 1, S 70, HT&B sur, 750 ft from n and 250 ft from e line. Brownwood Prod. & Ref. Co., Brownwood, Williams 10, No. 645, J. Padilla sur, 180 ft from w and 150 ft from n line. E. H. Ramsey, Rising Star, Edington 1, S 45, HT&B sur, 600 ft from w and 450 ft from s line. W. H. Peckham et al, Wichita Falls, Bush 4, No. 624, J. Kinney sur, 300 ft w of 3. Blanchard & Porter, Brownwood, Eubanks 1, 141, R. Mitchell sur, 150 ft from s and w lines. Pandem Oil Corp., Wichita Falls, Hutton 9, J. A. Nobles sur, 300 ft n of 4. L. G. Bradstreet, Fort Worth, Eubanks 1, No. 141, R. Mitchell sur, 150 ft from s and e lines. Cox, Drake & Ryan, Brownwood, Culberson 1, S 4, E. T. Ry. sur, 150 ft from n and 750 ft from e lines. Cox, Deininger, Brownwood, Culberson 1, S 4, E. T. Ry. sur, 150 ft from s and e lines.

BRAZORIA COUNTY—Sinclair O. & G. Co., Fort Worth, Norton 3, P. D. McNeel sur, 250 ft from ne and 303 ft from se lines.

CALLAHAN COUNTY — Dale Oil Corp., Wichita Falls, Lobban 3, 2995, TE&L sur, 150 ft from s and w lines. Young Bros. & Alexander, Inc., Fort Worth, Diller 6, S 52, L. A. L. sur, 300 ft w of 2. Mortimer, Meredith & Benton, Cisco, Hickman 2, S 1, I&GN sur, 600 ft from n and 450 ft from w line. L. A. Warren et al, Cisco, Kelton 1, S 130, BBB&C sur, 150 ft from n and e lines. J. F. Jones et al, Abilene, Ramsey 8, 2282, TE&L sur, 200 ft from e and 750 ft from s line. M. G. McDonald, Putnam, Lobban 25, 2995, TE&L sur, 200 ft e of 20.

COLEMAN COUNTY—Paul A. Diggs, Fort Worth, Key 1, Wickson sur, 175 ft from e and 470 ft from s line. J. A. Barbre, Coleman, Weir 1, No. 744, M. Lappe sur, Howard Samuel et al, Coleman, Pitts 1, S 45, J. Johnson sur, 283 ft from n and 150 ft from w line. Byrd & Golston, Brownwood, Cheney 1, No. 662, J. Gray sur, 150 ft from s and w lines. Continental Oil Co. & Cheney, Wichita Falls, Sealy-Smith 1, S 13, blk 1, GH&H sur, 250 ft w of center of e line. Paul A. Diggs, Fort Worth, Keys 2, A. Wickson sur, 175 ft from n and 150 ft from e line. J. K. Hughes Dev. Co., Mexia, Knowlin 1, No. 755, J. Perehouse sur, center. Roth & Faurot, Valera, Smith 1, No. 1293, Lockhart sur, 2000 ft from w and 5700 ft from s line.

CROCKETT COUNTY—Republic Prod. Co., San Angelo, Powell 1B, S 52, blk BB, EL&R sur, 1320 ft from e and 330 ft from n line. F. P. Zoch, Fort Worth, University 1, S 16, blk 14, 330 ft from s and w lines. Kirby Pet. Co.

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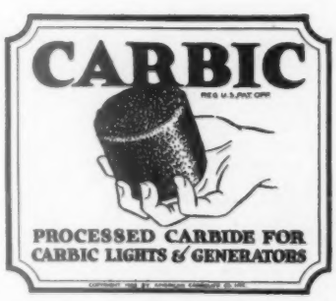

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CONCHO COUNTY—R. V. Whiteside, San Angelo, Harrell 1, S 27, J. Moore sur, 3500 ft from n and 1100 ft from e line.

CAMP COUNTY — D. D. Johnson, Pittsburgh, Pa. Browning 1, blk 4, H. C. S. L. sur, 750 ft from s and w lines.

CRANE COUNTY—Gulf, Fort Worth, McElroy 50, S 200, blk F, CCSD&RGNG sur, 740 ft of 43. Texas Pacific Coal & Oil Co., Ranger, State-Crane 1, S 34, blk 30, Univ. Lands sur, 1650 ft from s and w lines.

CARSON COUNTY—Prairie O. & G. Co., Ranger, Percival 2, S 199, blk 3, I&GN sur, 330 ft from n and e lines. Fred Morris, Fort Worth, Bernard 1, S 44, blk 4, I&GN sur, 330 ft s of center of n line. Denson Cobb, Pampa, Cobb 1, S 184, blk 3, I&GN sur, 930 ft from n and 380 ft from e line.

COTTLE COUNTY—Skelly Oil Co., Tulsa, Okla., Cannon 1, S 15, F. P. Knott sur, 990 ft n of center of s line.

CALDWELL COUNTY—Datex Prod. Co., Luling, August 1, A. Floyd sur, 600 ft from n and 200 ft from e line. Magnolia, Dallas, Hughes 1, N. Reaville sur, 150 ft from sw and 750 ft from se line. W. E. Allaun, Fort Worth, Rios 3, J. Henry sur, 150 ft from n and e lines.

COOKE COUNTY — Pacific O. & G. Co., Fort Worth, Hunt 1, F. Godley sur, 150 ft w of center of e line.

COMANCHE COUNTY—Nebraska O. & G. Ass'n., Campbell, Neb., Crestman 1, N. J. Nichols sur, 200 ft from n and 375 ft from w line.

CHAMBERS COUNTY—Pure Oil Co., Fort Worth, Old River Lake 1, Permit No. 11680 sur, n central.

DALLAS COUNTY—Baxter, Smith & Silvern, Dallas, Campbell 1, W. H. Pulliam sur, 225 ft from n and 761 ft from e line.

DUVAL COUNTY—G. M. Partee, Ripley, Tenn., Hahl 1, S 250, blk 16, 550 ft from n and 150 ft from w line.

EASTLAND COUNTY—L. Teatsorth, Eastland, Hague 1, S 5, blk 6, E. T. Ry. sur, 600 ft from n and 500 ft from w line. O. V. Goldrick, Fort Worth, Stubblefield 1, E. T. Ry sur, 150 ft from n and 1583 ft from e line. Schimmel Prod Corp., Fort Worth, May 3, S 3, blk 4, H&TC sur, 155 ft from n and e lines. Keyes & Price, Cisco, Pippino 1, 3179, TE&L sur, 750 ft from w and 150 ft from s line. Amerada Pet. Corp., Cisco, Roberts 1, R. R. Puckett sur, 2106 ft from w and 2313 ft from s line. Moody Corp., Cisco, Dyer 3, S 464, S. P. Ry. sur, 600 ft from s and w lines. J. H. Fulcher et al, Eastland, Woods 1, n central Andrews Pet. Corp., San Antonio, Pippen 2, 3167, TE&L sur, 150 ft from n and 796 ft from e line; 3, 658 ft from n and 150 ft from e line. Wiley Harbin, Eastland, Turner 1, S 30, blk 2, H&TC sur, 330 ft from n and 450 ft from w line.

FAYETTE COUNTY — Marshall & Moore O. & G. Co., Inc., Gonzales, Cole 1, 150 ft from s and w lines.

FORT BEND COUNTY—G. M. Goldsmith, Needville, Rose 1, S 41, H&TC sur, 696 ft from w and 1125 ft from s line.

FISHER COUNTY — Cranfill & Reynolds, Cisco, Willingham 1, S 199, BBB&C sur, sw corner.

GRAY COUNTY — Wilcox O. & G. Co., Tulsa, Okla., Worley 28, S 61, blk 3, I&GN sur, se corner. Prairie O. & G. Co., Ranger, Harrah 1, S 163, blk 3, I&GN sur, 330 ft from n and e lines. H. L. Holbrook et al, Pampa, Williams 1, S 15, blk 1, 330 ft from n and w lines. Prairie O. & G. Co., Ranger, Worley-Reynolds 5, S 83, blk 3, I&GN sur, 660 ft n of 1. Alco Royalty Corp., Tulsa, Okla., Finley 1, blk S, B. E. Chaney sur, 330 ft from w and 380 ft from s line.

GONZALES COUNTY—W. G. Malone, Gonzales, Staton L. J. M. Salinas sur, 375 ft from sw and 1275 ft from nw line. Texas Co., Houston, Denman 2, A. Zumwalt sur, 100 ft from w and 60 ft from s line.

HARDIN COUNTY—East Batson Oil Co., Batson, Conroy 6, W. Donohoe sur, 285 ft from n and 38 ft from e line. Ada Belle Oil Co., Batson, McGoldrick 117, Stateland sur, 50 ft from e and 55 ft from n line.

HARRIS COUNTY — Humble, Houston, Warren 4, J. Hudson sur, 1756 ft from n and 260 ft from w line. E. C. Drain et al, Humble, McDonald 2, J. Strange sur, 200 ft nw of 1. John A. Deering, Houston, Bissonet 4, J. B. Jones sur, 2200 ft s of 3.

HENDERSON COUNTY—Ferdinand Heine, Jacksonville, Cox 1, blk 28, J. B. Brown sur, 1824 ft from e and 573 ft from s line.

JACK COUNTY—O. F. Whitaker, Jacksboro, Roach 3, Berryman sur, 150 ft from s and w lines.

JEFFERSON COUNTY — Yount-Lee Oil Co., Beaumont, McFaddin 67, blk 1, P. Humphreys sur, 47 ft from e and 1312 ft from n line; 66, 337 ft from e and 1347 ft from n line. Stella Oil Co., Beaumont, Hogg-Swayne 24, blk 37, J. A. Veatch sur, 250 ft from e and 75 ft from s line; 25, 300 ft from e and 400 ft from s line. Battleship Oil Co., Beaumont, Keith 1, blk 8, J. A. Veatch sur,

JIM HOGG COUNTY—W. C. Berg, Laredo, Hinnant 1, S 19, blk 9, 250 ft from w and 150 ft from s line.

JACKSON COUNTY—J. B. Douglas, Ettna, Lawrence 1, J. McHenry sur, 212 ft from n and 6300 ft from e line.

LAMPASAS COUNTY—Alexander Bros. et al, Pampa, Alexander 1, S. Berry sur, se corner.

LIBERTY COUNTY—Texas Co., Houston, Carr 1, J. Devore sur, 200 ft from n and 400 ft from e line; Green 4, M. G. White sur, 1044 ft from e and 50 ft from s line.

MONTAGUE COUNTY — Lanfair Drilling Co., St. Jo, McNabb 1, J. McCollier sur, 150 ft from n and w lines. Roy I. Carter, Wichita Falls, Bouldin 5, C. Chacon sur, 300 ft w of 5. Pure Oil Co., Fort Worth, Loy 6, Wm. Donoho sur, 300 ft n of 2.

McCULLOCH COUNTY—McLean & Jamison, Ballinger, West 1, S 155, H&TC sur, 1100 ft from n and 650 ft from w line.

MILAM COUNTY—Paggi Bros. Oil Co., Beaumont, White 1, M. M. Valdez sur, 150 ft from e and 450 ft from n line.

McLENNAN COUNTY—O. W. Killam, Laredo, Kirkland 1, Aperlado sur, 3000 ft from e and 1000 ft from s line.

MEDINA COUNTY—Golden West Oil Co., San Antonio, Adams 2, S 14, blk 2, E. C. Durst sur, 200 ft from s and w line.

PRESIDIO COUNTY — Phillips Pet. Co., Bartlesville, Okla., Tootle 1, S 75, blk 3, D&P sur, center of ne¼.

PALO PINTO COUNTY—Nelson Oil Synd., Gordon, J. B. Harlin 1, S 29, B. C. S. L. sur, 300 ft from s and 500 ft from e line.

PANOLA COUNTY — Magnolia, Dallas, Baptist Church 1, Jacob & Larkin sur, 330 ft from s and e lines.

SHACKLEFORD COUNTY—C. W. Sommer, Albany, Thorpe 1, S 1, Blind Asy. sur, 200 ft from s and e lines. F. P. Zoch, Fort Worth, Sedwick 1, S 6, E. T. Ry. sur, 150 ft sw of center of ne line; King 1, S 215, E. T. Ry. sur, 660 ft from n and 330 ft from e line. Petroleum Prod. Co., Wichita Falls, Matthews 4, S 128, E. T. Ry. sur, 300 ft s of 3; 5, 1169 ft from w and 450 ft from s line. Hope O. & G. Co., Fort Worth, Reynolds 12, S 24, blk 11, T&P sur, 300 ft w of 9. Cosden & Hope O. & G. Co., Fort Worth, Davis 10, S 13, blk 12, T&P Ry. sur, 300 ft n of 7. E. T. Hargrave, Ranger, Sammons 1, S 21, Blind Asy. sur, 200 ft from e and 300 ft from s line. J. S. Dennis, Moran, Dennis 6, S 15, L. A. L. sur, 150 ft from s and e lines. Meridian Pet. Corp., Tulsa, Alexander 2, 580, TE&L sur, 325 ft s of 1. O'Hara & Robinson, Abilene, Hill 1, S 37, Blind Asy. sur 150 ft e of center of w line. C. H. Helff et al, Albany, Williams Hrs. 1, E. T. Ry sur, 150 ft from s and e lines. Meredith & Grant, Moran, Webb 8, S 68, Univ. Lands sur, 150 ft from n and w lines.

SMITH COUNTY—Humble, Houston, Williams 1, A. D. Keller sur, 770 ft from e and 450 ft from s line.

TAYLOR COUNTY—O. H. Harwell, Abilene, Wagley 1, S 3, D&D Asy. sur, 150 ft from s and e lines.

TOM GREEN COUNTY—Geo. E. Tinker, Jr., San Angelo, Jones 1, No. 646, I. J. Schaffer sur, 1435 ft from n and 156 ft from s line.

UPTON COUNTY—F. P. Zoch, Fort Worth, Murphy 1, S 1, GC&SF sur, 1320 ft from w and 660 ft from s line; Union Land Co. 1, S 13, blk 36, H&TC sur, 1980 ft from n and e lines.

WICHITA COUNTY — Magnolia, Dallas, Kemp 1, blk 27, W. V. F. L. sur, 150 ft from e and 450 ft from s line. Coppock & Coleman, Iowa Park, Kemp & Kempner 8, S 82, HT&B sur, 60 ft e of 1. Bridwell & Heydrick Oil Co., Wichita Falls, Waggoner 23, Seale & Morris sur, 200 ft from w and 775 ft from s line. J. W. Caldwell, Wichita Falls, Kemp 8, S 26, blk 10, W. V. F. L. sur, 200 ft from n and 175 ft from e line. Windhham & Pilkenton, Burkburnett, Burnside 5, J. H. Sharp sur, 150 ft s of center of n line. Harry Hines, Wichita Falls, Waggoner 1, S 2, GC&SF sur, 842 ft from n and 530 ft from w line. L. P. Hammond, Wichita Falls, Boyd 3, blk 50, W. V. F. L. sur, 150 ft from n and 475 ft from w line. Ryan Consolidated Pet. Corp., Bartlesville, Okla., Nance 94, S. O. Fowler sur, 385 ft sw of 93. Hammon & Garrett, Wichita Falls, McCarty C 8, W. R. Eaves sur, 300 ft w of 7. Texas Co., Wichita Falls, Waggoner Bros. B1, GC&SF sur, 763 ft from e and 150 ft from s line. T. F. Hunter, Wichita Falls, Waggoner 33, S 1, GC&SF sur, 250 ft from w and 15 ft from s line.

WINKLER COUNTY—Roxana Pet. Corp., South Bend, Hendrick A3, S 45, blk 26, 440 ft from n and 330 ft from e line. Dixie & Southern Crude Oil Purch. Co., Shreveport, La. I. Hendrick A4, S 44, blk 26, 1330 ft from n and 330 ft from e line; A3, 440 ft from n and 330 ft from e line; I. Hendrick K3, S 41, blk 26, 440 ft from n and 330 ft from e line; K5, 330 ft from e and 1320 ft from s line; K4, 330 ft from e and 2310 ft from s line; K6, 330 ft from s and e lines; K2, 1320 ft from n and 330 ft from e line; I. Hendrick A4, S 4, blk 12, 330 ft from n and e lines; I. Hendrick H 4, S 28, blk B5, 330 ft from s and w lines; I. Hendrick B4, S 33, blk 26, 330 ft from w and 990 ft from s line; I. Hendrick M15, S 33, 2310 ft from s and e lines; M5, 1990 ft from e and 440 ft from s line; M16, 330 ft from w and 1650 ft from s line; I. Hendrick 1, S 5, blk B12, 330 ft from n and e lines. Southern Crude Oil Purchasing Co., Shreveport, La., I. Hendrick B5, S 33, blk 26, 330 ft from n and w lines; I. Hendrick K4, S 41, blk 26, 330 ft from e and 2200 ft from s line; K6, 330 ft from e and 440 ft from s line; I. Hendrick J1, S 30, blk B5, 330 ft from e and 2610 ft from s line. Atlantic Oil Prod. Co., Dallas, Hendrick G 2, S 46, blk 26, 440 ft from n and 330 ft from w line; I. Hendrick 7, S 40, blk 26, 2200 ft from n and 330 ft from w line. Winkler Oil Prod. Corp., Fort Worth, Hendrick 1, S 33, blk 26, 330 ft from n and e lines. Republic Prod. Co., San Angelo, Hendrick 3B, S 42, blk B5, School sur, 1650 ft from n and 330 ft from e line. Banker's Prod. Corp., El Paso, Hendricks 1, S 30, blk B5, center, Gulf, Fort Worth, Hendrick 18, S 45, blk 26, 440 ft from n and 330 ft from e line; 19, 440 ft from n and 330 ft from w line; 16, 330 ft from n and w lines; 17, S 40, blk B5, 440 ft from s and e lines. Marland Oil Co., Fort Worth, I. Hendricks 1, S 29, blk 26, 330 ft from s and e lines.

WHARTON COUNTY—Weed-Gayle Oil Co., Beaumont, Bay 17, S. F. Austin sur, 455 ft from nw and 460 ft from ne line; 18, 425 ft from nw and 95 ft from sw line.

WILBARGER COUNTY—Texas Co., Wichita Falls, Waggoner C6, S 25, blk 4, H&TC sur, 205 ft from s and w lines. Phillips Pet. Co., Bartlesville, Okla., Brady 2, S 30, blk 4, H&TC sur, 200 ft from n and 150 ft from w line. Fain-McGaha Oil Corp., Wichita Falls, Waggoner M 7, S 24, blk 4, H&TC sur, 300 ft e of 5. Waggoner Ref. Co., Inc., Wichita Falls & Electra, Waggoner G1, S 24, blk 4, H&TC sur, 200 ft from s and e lines. Fain-McGaha Oil Corp., Wichita Falls, Waggoner M 6, S 24, blk 4, H&TC sur, 150 ft from n and w lines.

WEBB COUNTY—Cole Pet. Co., Laredo, Benavides 58, S 412, blk 3, 300 ft w of 56; 59, 300 ftw of 67.

WHEELER COUNTY—Angus & Miller et al, Shamrock, Trostle 1, S 90, blk 17, H&GN sur, 660 ft from n and e lines.

YOUNG COUNTY—Nash & Windfohr Oil Corp., Graham, Lisle 1, Oxford sur, 600 ft from w and 150 ft from n line. F. A. Clarida, Loving, Clarida 1, W. A. Nichols sur, 150 ft from s and w lines. W. Daniels, Wichita Falls, Hickerson 1, 1951, TE&L sur, 150 ft from n and w lines. Continental Oil Co., Wichita Falls, Weichman 1, 173, TE&L sur, 150 ft from n and w lines. Perkins & Cullum, Wichita Falls, Stewart 14, 300 ft sw of 12. Gypset Oil Co., Athletic Club Bldg., Dallas, Bavansett 1. Nicholson sur, 400 ft from s and w lines. E. F. Scott, Wichita Falls, Kirby 1, 1934, TE&L sur, 1542 ft from e and 750 ft from n line. Schmann, Clark & Pagan, Wichita Falls, Vance 1, 2715, TE&L sur, 150 ft from s and w lines.

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P. P. Steed et al, Wichita Falls, Waters 1, 291, TE&L sur, 150 ft from n and w lines. R. C. Parker, Loving, Johnson 1, E. W. Sargent sur, 750 ft from e and 150 ft from n line. Hammon & Garrett, Wichita Falls, Hunt 1, 175, TE&L sur, 150 ft from s and w lines. Craig & Lowrie, Pittsburgh, Pa., Brown 2, S. Tynes sur, 3, 4.

ZAPATA COUNTY—Wm. R. Jewell, Laredo, Hinnant 2, S 10, blk 4, 255 ft from sw and 150 ft from se line. W. R. Duke, Wichita Falls, Martinez 8A, blk 24, C. W. Randado sur, 300 ft sw of 7; 9A, 285 ft sw of 6; 10A, 250 ft nw of 9A; 11A, 250 ft nw of 10A, 12A, 250 ft s of 9; 12½A, 230 ft sw of 10.

CALIFORNIA

BELRIDGE—Hugh Potter No. 2, 36-28-20.

DOMINGUEZ—Union Oil Co., Callender 24, 33-3-13.

HUNTINGTON BEACH—Standard Oil Co., Bolsa 37, 34-5-11.

INGLEWOOD—Standard Oil Co., L. A. I. 56, 12-2-14.

LONG BEACH—Shell Co., S. F. L. 4, 29-4-12. D'Angelo Oil Co., No. 3, 19-4-12. Richfield Oil Co., M. 1, 19-4-12. W. F. Meyer, No. 2, 19-4-12. Chas. A. Son, S-Y 1-A, 19-4-12.

LOS ANGELES COUNTY—Shell Co., M. 2, 4-2-15.

MIDWAY—Standard Oil Co., No. 91, 19-31-24. North American Consolidated Oil Co., No. 30, 32-31-24.

MT. POSO—Fred J. Elliott, No. 1, 20-27-28.

SAN MATEO COUNTY—Shell Co., Cowell 2, 8-6-5.

SEAL BEACH—Marland Oil Co., Bixby 21, 11-5-12.

SOLANO COUNTY——H. Rambke No. 1, 18-7-1.

VENTURA—Shell Co., Taylor 23, 29-3-23; Edison 24, 28-3-23.

VENTURA COUNTY—Standard Oil Co., S. 1, 10-2-22.

ARKANSAS

ASHLEY COUNTY—South Arkansas Nat. G. & F. Co., Holmes 1, 250 ft s and 250 ft e of nwc Sec. 9-16-15.

OUACHITA COUNTY—Buffalo Oil Co., Laughlin 1, 22-15-19, 350 ft s and 350 ft e of nw c nw. Skelly Oil Co., Umstead 10, 33-15-15, center of nw se.

UNION COUNTY—Lion O. & R. Co., Murphy H-3, (owd) 9-16-15, 660 ft n and 330 ft w of se c w½ se nw. Lion O. & R. Co., Nash 1, 6-17-13, nwc ne se. Ouachita Nat. Gas Co., Perdue 1, 33-16-14, nw c nw nw. Rice et al, Heinman & Meyers 1, 23-18-16, center of w 1 sw ne. F. B. Wood Tr.'s Spahr 2, 34-15-16, sw c nw ne.

LOUISIANA

ACADIA PARISH—Cline, Smith & Cline, Lake Charles, Lucey Wilson 3, 45-9s-2w, 748 ft n and 476 ft w of se c.

CALCASIEU PARISH—Green Oil Co., Lake Charles, Moore 10, 28-9s-11w, 950 ft s and 425 ft e of nw c. Gulf, Houston, Lutcher & Moore 9, 19-9s-12w, 1130 ft s and 2630 ft w of ne cor of Sec. Vinton Pet. Co., Orange, Texas, Harmony 16, 34-10s-12w, 24 ft e and 184 ft n of sw cor of sec.

CAMERON PARISH—Yount-Lee Oil Co., Beaumont, Texas, State Land 11, 24-12s-10w, 190 ft w and 250 ft n of sw c of sec. 36-12s-10w; State Land 12, 36-12s-10w, 850 ft e and 635 ft n of sw c; State Land 13, 36-12s-10w, 587 ft e and 440 ft n of sw c.

CATAHOULA PARISH—Lochnager O. & G. Co., Pittsburgh, Pa., Marsh-McMillan 2, 26-9n-6e, 130 ft n and 100 ft w of se c se nw.

DE SOTO PARISH—P. H. Williams et al, Arkadelphia, Ark., Fortson 2, 4-12n-11w, 400 ft s and 150 ft e of nw c se nw.

OUACHITA PARISH—Fred Stovall, Monroe, Giles Johnson 1, 31-19n-4e, 350 ft s and 100 ft w of ne c.

PLAQUEMINE PARISH—Gusher Bill O. & G. Co., Inc., New Orleans, Park Plantation Hero-Wall Co. 1, 72-14s-24e, 600 ft due ne from sw c sec. 72.

TENSAS PARISH—W. L. Brock, Trustee, McComb, Miss., J. T. Curry 1, 39-11n-12e, 150 ft s and 150 ft e of nw c se nw.

UNION PARISH—Ruston Drilling Co., Ruston, Betty Neal 1, 24-20n-3e, 660 ft s and 2080 ft e of nw c.

The World's Largest Mud Pump

MODERN drilling methods and deep holes require the handling of large volumes of mud at high pressures. The Gardner-Denver 4½x7¼x20-inch Divided Cylinder Booster Pump for slush and oil line service offers the largest mud capacity of any mud pump ever built, and provides for a working pressure of 1500 lbs.

Heavy, rugged construction, fluid cylinders of cast *steel*, the divided pattern fluid end, and the slower 20-inch stroke of this pump, are all features that promote long life and economy. Ask for bulletin P-33 giving detailed information.

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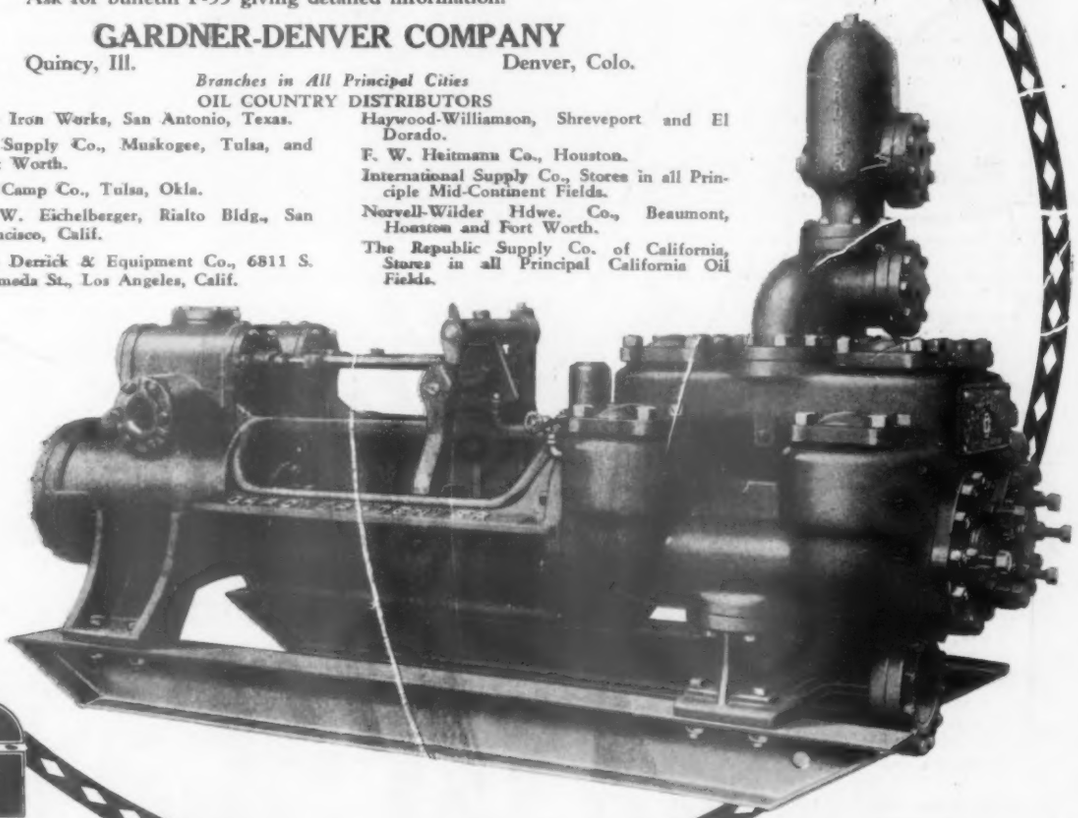

WILDCATS FROM ALL SECTIONS

MOUNTAIN STATES

MONTANA

BIG HORN—Selig Oil Co., 1, se 21-6s-35, sd 865 ft.

CARBON—Ohio Oil Co., Northern Pacific 1, 11-7s-21e, dr 4350 ft. Atlantic Oil Co., 3, 20-7s-24e, no report.

CASCADE—Lone Star, McLean 1, 12-21n-11e, dr 1000 ft.

CUSTER—Montana Belle, 28-8-45, resuming.

FERGUS—Melton Corp., Fenholt 1, 24-21-17, dr 3000 ft, paraffin showing. Mineral Research Co., 1, 13-17-23, susp 930 ft. DeMont Oil Co., 29-16-29, dr 500 ft. Minnesota-Flatwillow Pet. Co., se¼ sw¼ sec 5-12-15, mvg in.

GARFIELD—Carroll Bros., nw ne 6-14n-31e, stndg cmtd 1440 ft.

HILL—California Interests, sw 15-30-13e, resuming at 100 ft. Jones Oil Co., Mangell 2, 32-34-14e, dr 325 ft.

LIBERTY—Bear's Den Oil Co., Laird 1, 31-37n-6e, dr 3180 ft. Sunburst O. & R. Co., Disotell 1, 10-37-5e, testing.

MADISON—Madison County Oil Co., ne 17-7s-1w, sd 1700 ft.

MUSSELSHELL—Manhattan Oil Co., ne 24-7-24e, sd 60 ft. McElwain Oil Dev. Assn., 2-11-22, rig.

RICHLAND—Community Drilling Co., Pioneer 1, se 35-27-51n, testing oil and gas showing at 3081 ft.

PONDERA — Claggett Dev. Co., 8-27-4w, stndg 25 ft in lake of water. J. W. Elliott et al, nw¼ 17-27-4w, dr 800 ft. Texas Pacific Coal & Oil Co., Hirshberg 1, sw 14-27-4w, rig. Continental Dev. Co., Gjullin 1, nw 15-27-4w, rig.

PHILLIPS—Big Dome Oil Co., Bloomberg 1, ne 1-32-32e, sd 980 ft. Dillman & Stephenson, sw 8-31n-34e, dr 700 ft.

SWEETGRASS—Shoshone Consolidated, ne 23-2n-15w, dr 2540 ft.

TETON—Craig-Speer-McCutcheon, 9-23-2w, fsh 1400 ft. Continental Dev. Co., Ritmoure 1, 8-27-5w, dr 2375 ft. Hardrock Oil Co., 1, 5-25-1e, shot at 1507 ft. Crockner et al, se 2-24-1e, sd 600 ft. Fulton Pet. Corp., Tibbets 1, ne 8-25-1e, dr 300 ft. Elkhorn O. & G. Co., 1, ne 12-24-1e, dr 150 ft.

TOOLE—Sunburst O&R Co., Grandview 1, 10-34n-32, rig. Madeline Oil Co., Swenson 1, 33-35-4w, dr 1460 ft. Western Natural Gas Co., Pitchard 1, 3-37-2e, dr 2200 ft.

WIBAUX—Johns & Hagan, sw 15-11n-57e, resumed at 700 ft.

COLORADO

ARCHULETA — Kansas-Colorado Oil Co., 17-34-2w, sd 1300 ft.

BACA—Marland Oil Co., Table Mesa 1, 8-30s-50w, spd 70 ft.

EL PASO—Grand Union Oil Co., No. 2 John Jr., 19-17s-67w, sd 775 ft.

ELBERT—Botts, Likkick et al, se 1-8s-59, dr 1800 ft.

JACKSON—North Park Oil Co., Goettler 1, 9-6n-82w, co 506 ft.

JEFFERSON—Wood et al, 1, 30-3s-69, dr 1125 ft.

LAS ANIMAS—Reiter-Foster & Phillips Pet., 23-29n-56, dr 1835 ft.

LA PLATA—Detroit Oil Assn., Olbert 1, 9-35-12w, sd 1610 ft.

LOGAN—Northeastern Colo. Oil Co., State 1, 36-8n-55w, dr 5597 ft.

MESA—Eureka Oil Co., Holly 2, 24-1s-1e, dr 925 ft.

MOFFAT—Ohio Oil Co., Kuykendall 1, 22-21n-11w, sd for winter. Reiter-Foster Oil Co., State 1, 16-12-100, sd 2240 ft. Yarg Producing & Ref. Co., 205, 26-4n-92w, oil showing, set cas at 3737 ft. Alliance Oil Co., Milliken 1, 14-4n-92w, set 10-in at 2780 ft.

MONTROSE—Indian Pet. Corp., Gilmore 1, 4-45-16w, abn $185 ft.

RIO BLANCO—Texas Prod. Co., Freeman 1, 27-3-94, dr 5580 ft. Argo Oil Co., sw 9-2s-96w, stndg, ready to spud.

ROUTT—Great Western Oil Co., State 1, 17-60n-56w, dr 2500 ft.

WELD—Platte Valley Pet. Corp., Patterson 1, 24-6n-61w, stndg 3811 ft.

YUMA — Etmyre Snyd., se sw 7-2s-43, dr 350 ft.

NEW MEXICO

CHAVES — Buffalo-Roswell 1, 24-11-27, sd 4290 ft. McQuigg Bros., Neis 1, 7-5s-29e, dr 1562 ft. Berrendo O. & G. Co., Roswell 1, 5-10-27, sd 725 ft. Manhattan Oil Co., Arena 1, 18-13-31e, dr 3680 ft. Snowden & McSweeney, Merchant 1, nw 27-15s-23e, sp.

CURRY—Hasson Pet. Co., Laird 1, 22-8s-36, spd and sd.

DEBACA—Matador Oil Co., State 1, sw 6-4n-20e, spd 209 ft.

GUADALUPE—Hanchett Oil Co., Rutherford 1, 24-8-24, dr 4355 ft.

LEA—Midwest Ref. Co., State 1, 9-19s-39e, cas cmt 3050 ft. Marland Oil Co., Eaves 1, 19-26-37, cleaning out at 2885 ft. Marland Oil Co., Seideman 1, 4-25s-36e, set 10-in at 1735 ft. Marland Oil Co., Robert 1, 20-23s-35e, dr 1601 ft. Marland Oil Co., Sholes 1, 19-25s-37e, sp 210 ft. Empire Gas & Fuel Co., State 1, 8-21s-35e, dr 800 ft. Gypsy Oil Co., State 1, 34-21s-36e, dr 510 ft.

McKINLEY—Smart & Redi, 7-17-9, rig. Inland Oil Corp., 22-18-10, installing heavier rig. S. Dysart 1, 21-14-9, sd 1650 ft. Williams et al, 30-18-8w, sd 1795 ft. Reliance Oil Co., Valentine 1, 16-17-9, dr 1555 ft.

QUAY—Gibson Oil Corp., 1, 25-8-32, prep to deepen.

SAN JUAN—Continental Oil Co., Munoz 17, dr 4969 ft. Kansas-Colorado Oil Co., Atterberry 1, 23-31-11, sd 1850 ft. T. C. N. Oil Co., Lanier 1, 9-29-11, sd 547 ft. Huntington Park Oil Co., 29-30-9, waiting smaller tools, td 4585 ft. Fidelity Oil Co., Abrams 2 ,23-29-11, stndg 667 ft. Huerfano Oil Co., Wiltbank 1, 23-29-11, tsndg 800 ft. San Juan Petroleum Co., 1, 9-29-13w, dr 2950 ft. Poole & Peebles, Lawson 1, 9-30n-11w, dr below 700 ft. Co-Ne-Mo 1, 28-29-11, dr 635 ft. Kirtland Drlg. Co., Hunt 1, 10-20-15, spd new hole 75 ft. Kutz Conon O. & G. Co., Day 1, 29-28-10w, dr 270 ft. Fidelity Oil Co., James 1, nw 23-29-11w, spd at 209 ft.

SAN MIGUEL—E. Adams et al, Deason 1, 14-15n-16e, co 1155 ft.

SOCORRO—Abo Oil Co., 1A, 14-3s-6e, set 12½-in at 600 ft and sd.

TORRANCE—Duran Dome Oil Co., 1, 31-2-14, sd 1600 ft. F. G. Wilson, Trustee, Pace 1, 12-6n-27, stndg 2215 ft. Bluhall O. & G. Co., 20-6n-10e, sd 854 ft, waiting cable. San Juan Coal & Oil Co., Randall 2, 26-6n-10e, fsh 5323 ft.

VALENCIA — Acme Oil Co., N. M.-Ariz. Land Co., 26-6-3, dr 2450 ft.

UTAH

DUCHESNE—Midwest Explo. Co. & Utah Southern Oil Co., Earley 1, 13-4-6, dr 3995 ft.

CARBON—Price River Pet. Co., 1, se 16-14s-10e, dr 2685 ft.

GRAND—Utah Oil Ref., Moab Consolidated, Utah Southern-Salt Valley 1, 13-23-21, rigging up. Utah Southern & Moab Consolidated, Shafer 1, 36-26-20, dr 960 ft. Navajo Petroleum Co., 2-20-21, mvg in rig.

NAVAJO RESERVATION—Continental Oil Co., Boundary Butte 1, 31-43-21, fsh 2625 ft, td 3760 ft.

SAN JUAN — Union Oil Co. of Calif., 40 miles se of Moab, sptg lcn. Boulder Knoll O&G Co., 1, 17-34-25, ur to set 6¼-in at 225 ft.

UINTAH—Western Venture Oil Co., Krumvieder 1, 6-5-21, dr 840 ft. Maude Ellen Oil Co., 28-3-21, dr 950 ft.

UTAH—Diamond Oil Co., 3, ne 28-8s-4e, dr 1350 ft, oil showing.

WAYNE—Texas Prod. Shipley 1, 5-27-14, fsh 2975 ft. Phillips Pet. Corp., 16-27-16, sp, standard tools below 100 ft.

WASHINGTON—Ora L. Hiatt et al, 30-43-14w, dr 420 ft. Mid-American Oil Co., nw 17-43s-15w(dr 1500 ft. Uzona Oil Co., se 17-43s-15w, susp 390 ft. Uzona Oil Co., 1A sec 19-43s-15w, spd and sd. C. E. Cline et al, 2, 27-41s-12w, will resume at 275 ft. C. E. Cline et al, 3, 23-41s-21e, plugged back from 2, ne 23-41s-12w, water intrusion 1557 ft. Zion 558 ft to 350 ft and shot. Virgin Pet. Corp., O. & R. Corp., 3, sw 13-41s-12w, sd 756 ft. Miller & Taylor, nw 23-41s-12w, dr 150 ft.

MILLARD—Beaver Valley Oil Co., Blackrock 1, 20-25s-9w, dr 3180 ft, carrying 4½-in.

WYOMING

ALBANY—Union of Calif. 1, ne sw nw 33-17n-75w, dr 2000 ft.

BIG HORN—Agate Oil Co., ne 13-51-92, no report. Utah-Southern 3, 29-56n-97w, dr 3148 ft. Wisconsin-Himes, 9-54-94w, td 673 ft. Producers & Refiners 3, 24-56n-98w, dr 1780 ft. Assurance Oil Co., 1, 24-51n-93w, rig up. Prescott-Bert 3, 30-51n-92w, spd.

CARBON — Portland Dome Synd., 28-26n-86w, sd 3600 ft. Graybeal Synd., 16-28-91, sd 4380 ft. Simpson Ridge Pet. Co., se 34-22n-80w, sd for repairs at 430 ft. Lake Valley Oil Co., se 14-20-88, resum 4915 ft. Pacific-American Oil Co., sw sw 32-25-89, spd and sd.

CONVERSE—Wind River O. & G. Co., ne 8-32-72, dr 500 ft. Criterion Oil Co., Irvine 1, 5-31-70, co 3597 ft. John Ackard, McKinley 1, 21-31-69, hauling in fuel to resume, 3000 ft.

FREMONT—Producers & Refiners, Muskrat 1, 34-34-92, fsh 3442 ft. Texas Prod. Co., Alkali Butte 1, 1-34-95, run 8¼-in at 3065 ft. Zola Oil Co., Crook's Gap 1, 25-27-93, sd 3750 ft. Iowa-Wyoming Inv. Co., 30-1s-2e, bottomed at 1500 ft. Martin Falk, ne 9-31n-98w, str hole at 2308 ft. R. A. Brett et al, se 29-32n-93w, will resume at 1300 ft.

JOHNSON—Fairway Oil Co., Crazy Woman 1, 7-47-82, sd 2367 ft. Tarrant Synd., 17-46n-82w, sd 3615 ft.

LINCOLN—Fontenelle Oil Co., 1, ne ne 1-24n-113w, wtg cas, td 1075 ft. Quad States Enterprise, Inc., 11-19n-116w, lcn. Midwest Explo. Co., Waterfall 1, sw 35-22-115, mvg in.

NATRONA—Combs Dev. Co., nw 12-39-78, sd 2016 ft. Combs Dev. Co., ne 12-39n-78w, repairing, td 660 ft. Bessemer Oil Co., 8-33n-82w, abn 1530 ft. Shoshone Consolidated Oil Co., se 4-30-81, sp.

NIOBRARA — Penn-West Pet. Co., 13-35n-62w, bottomed at 800 ft. Hollingsworth Bros., 17-39-79, fsh. Buck Creek Oil Co., 4-36n-62w, dr 500 ft.

PARK—Fred G. Ostland, Hoodoo Ranch 1, 23-51-101, sd 1740 ft. E. H. Rosenburg, ne 25-58n-98w, cav 1290 ft. Honolulu Oil Corp., and Producers & Refiners, Pitchfork 1, 14-48n-102, mvg in. Ohio Oil Co., 27-53-101, dr 3690 ft. Lenco Pet. Co., 20-52-102, sd 150 ft. Julius Peters et al, 17-57-101, lcn. Ydoc Pet. Co., ne 6-51n-101w, sd, will dr another well.

PLATTE—Walter Adams, Trustee, 13-25-66, dr 2000 ft.

SUBLETTE—Wyo. Prod. Co., se 30-28n-113w, dr 1905 ft. Calif. Co., 2, 11-29n-115w, rig up. Lackey et al, 12-28n-114w, redr 400 ft.

SWEETWATER—Prairie O. & G. Co., Tucker 1, 18-13-99, fsh tools 698 ft. P. & R.-Marland of Colo., 26-20-104, sd 485 ft. Tower Pet. Co., 1, 6-14n-103w, crooked hole at 1322 ft. Custer Pet. Co., 24-12-100, run 10-in at 1960 ft.

UINTA—Uinta O. & Dev. Co., 21-51n-120w, cas trouble at 2300 ft. Evanston O. & G. Co., 17-15-120, resum, td 2200 ft. California Co., 7-17n-116w, water so at 235 ft. Wilcox & Henley, se 3-14n-118, testing at 756 ft. Olsen Bros., se 6-15-118, sd 2275 ft. J. R. Kelley et al, 12-14-18, lcn. Minton et al, 8-18-116, dr 450 ft. P. L. Cooper et al, 10-16-118, resuming. Marmlsbury et al, DeLoney 1, 26-14-118, mvg in. Charles DeLoney 5-16-117, lcn.

WESTON—Gose Synd., ne 29-47n-65w, will resume with rotary cutter. Allen Oil Co., Howard 1, 15-44-64, operns resuming, td 600 ft.

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Petroleum engineers the world over have found Byron Jackson Multiplex pumps meet every possible requirement for pipe line and refinery service. This photograph shows Byron Jackson Multiplex pumps at a Sinclair pipe line station at Stroud, Oklahoma, handling 45,000 barrels per day. Similar pumps are used on the 100-mile from Ventura to Wilmington, the longest natural gasoline line in the world. This company's policy of constantly improving its pumps to meet the needs of the petroleum industry accounts for the wide acceptance of our equipment.

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BYRON JACKSON

CENTRIFUGAL PUMPS FOR EVERY SERVICE

LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
H. S. Goodwin Tr.'s, Mercer 1, 21-16-12	*	1973
DE SOTO PARISH—		
R. O. Roy, Tracy 1, 3-13-13	*	1650
LINCOLN PARISH—		
H. M. Harrell, Griffin 1, 17-19-1w	*	2553
UNION PARISH—		
Ouachita Nat. Gas Co., Hamlin 1, 22-19-1e	*	2276

BIENVILLE PARISH—S. P. Borden's L. & A. 2, 1-15-8, dr 1750 ft. Humble O. & R. Co.'s Anderson 1, 29-18-5, dr 3140 ft.

BOSSIER PARISH—J. R. Bahan's Bollinger 1, 32-23-11, arr to deepen 2647 ft; Kilgore 1, 31-23-11, set 6-inat 3040 ft. R. L. Crook's Larkin 9, 14-19-11, lcn. Deleware La. Dev. Co.'s Bollinger 4, 38-23-11, dr 150 ft. Doern et al's Bollinger 1, 9-22-11, sd 3900 ft. H. S. Goodwin Tr.'s Curtis 2, 36-17-13, sd 3257 ft; Curtis 3, 2-16-13, set 10-in at 157 ft. Wm. Gross et al's Hunter 5, 14-16-12, arr to set 6-in at 1898 ft; Stewart 1, 15-18-12, dr 2050 ft. Hamiter et al's Hamiter 1, 10-23-13, sd 1870 ft. D. D. Johnson's Caddo Bossier L. I. Co. 2, 13-17-14, dr 1100 ft. La. Oil Ref. Corp.'s Blanton 1, 23-23-12, arr to abn 3087 ft. J. S. McCullough's Hodges 6, 25-16-12, wosr 1548 ft. Nat. Gas & Prod. Co.s U.' S. Government 1, 31-23-11, set 9¼-in at 740 ft. Northwest La. Gas Co.'s Bollinger 2, 38-23-11, arr to deepen 2675 ft. Olmeda Gas Co.'s Mayer 1, 30-16-11, set 10-in at 140 ft. Palmer Corp.'s Hodges B-10, 25-16-12, set 6-in at 1874 ft. R. O. Roy's Werner 1, 7-17-11, lcn; Caplis 1, 25-16-12, set 12½-in at 35 ft. Sligo Synd.'s Skannal 2, 14-17-12, set 10-in at 105 ft. Triangle Drlg. Co.'s Bulkley 1, 9-20-13, dr 2166 ft. Woodley Pet. Co.'s Whitehurst 1, ?-16-12, set 10-in at 100 ft. Walker et al's Antrim 1, 28-22-13, sd 2880 ft.

CADDO PARISH—Bayou State Oil Co.'s Jolly C-1, 27-22-15, tested dry at 2284 ft. Bee Oil Co.'s Muslow 1, 29-20-15, wosr 2292 ft. J. W. Burton Tr.'s Caldwell 8, 18-21-15, dk. Belchic & Lasky's Sharp 4, 10-18-14, dr 2300 ft; Sharp 5, 0-18-16, lcn. W. D. Chew's State 6, 34-21-16, dk. J. T. Cox's Hall 1, 7-15-16, set 10-in at 60 ft. Dixie Oil Co.'s Robertshhaw 81, 13-21-15, sd 4148 ft; Clark 9, 14-21-15, dr 3976 ft; Robertshaw 92, 13-21-15, drill stem stuck 4382 ft; Huckaby 4, 11-21-15, sd 4037 ft. Dobson et al's Rives 7, 5-20-16, set 10-in at 90 ft. Empire G. & F. Co.'s Nicholson 1, 33-17-14, dr 3079 ft. Greenwood Prod. Co.'s Cooper & Ellerbe 1, 15-18-14, sd 3234 ft; Cushman & Bridges 1, 15-18-16, tested dry at 912 ft. Wm. Gross et al's Baker 1, 35-17-16, dr 830 ft. Gulf Ref. Co.'s Tyson 12, 14-21-15, arr to deepen 3819 ft. Haynes Bros.' Spell 2, 15-21-15, cemeting cavity 3992 ft. Magnolia Pet. Co.'s W. M. Bell 2, 6-17-16, coring 3184 ft; Dillon 18, 23-21-15, dk; Dillon 21, 23-21-15, lcn; Robertshaw 22, 23-21-15, coring 4049 ft; Hampton A-8, 15-21-15, sd 4039 ft. D. C. Richardson's Youree 6, 30-20-15, sd 2305 ft. Simms Oil Co.'s Glassell 1, 23-20-15, set 6⅝-in at 2206 ft. Simplex Oil Co.'s Baird 3, 22-20-15, set 6-in at 2200 ft. Shreveport Oil Corp.'s Muslow 3, 32-21-15, set 10-in at 40 ft. The Texas Co.'s C. M. L. 47, 23-21-15, arr to deepen 3657 ft.

CALDWELL PARISH — Greenwood Prod. Co.'s Caldwell L. & T. Co. 1, 27-13-5e, tested sw at 1637 ft.

CATAHOULA PARISH—Leonard Pet. Co.'s Knott 1, 32-11-8e, dr 4315 ft. The Texas Co.'s Tensas Delta Lbr. Co. B-1, 4-10-6e, setting 15½-in at 195 ft.

CLAIBORNE PARISH—ElDorado Chief Oil Co.'s Jones 1, 8-20-6w, dr 1900 ft.

DE SOTO PARISH—American Controlled Oil Co.'s Lanier 2, 5-11-11, sd 2800 ft. Gulf Ref. Co.'s Jenkins A-35, 35-13-12, dr 2018 ft. R. O. Roy's Lee 1, 23-14-13, dk. Reliance Drlg. Co.'s Jones 1, 8-11-14, sd 3018 ft. Williams et al's Fortson 2, 4-12-11, rig.

EAST CARROLL PARISH—Palmer Corp.'s O'Brien 1, 7-19-11e, dr 2265 ft. The Texas Co's Boone Live Oak 1, 11-20-12e, set 12¼-in at 163 ft.

FRANKLIN PARISH—Pittsburgh O. & D. Co.'s Moore 3, 12-11-6e, sd 2501 ft.

GRANT PARISH—W. D. Ball et al's Calhoun 3, 9-7-4w, set 8-in at 915 ft. Swope et al's Fee 3, 18-9-1e, sd 1607 ft; Fee 5, 18-9-1e, wosr 1602 ft.

LA SALLE PARISH — Elbert Pet. Co.'s Hardtner & Tannehill 1, 34-11-2e, lcn. H. T. Taylor's Urania 6, 19-10-2e, set 10-in at 100 ft; Urania 7, 19-10-2e, set 10-in at 100 ft.

MADISON PARISH—W. S. Smith's Yerger 1, 51-16-14e, sd 1700 ft.

MOREHOUSE PARISH—Elbert Pet. Co.'s Morehouse Plg. Co. 1, 40-19-7e, dr 2142 ft. Gulf Ref. Co.'s Higginbotham 1, 42-20-7e, dr 2225 ft; Weymond A-1, 7-18-6e, rig. Southern Carbon Co.'s Davis 1, 21-20-4e, dk. The Texas Co.'s Meyers 1, 15-22-7e, sd 2530 ft. United Carbon Co.'s Bastrop P. & P. Co. 1, 18-21-6e, tested sw at 2413 ft.

NATCHITOCHES PARISH — Lawson & Pharris' Crowell Lbr. Co. 1. 22-5-6w, sd 2758 ft.

OUACHITA PARISH—Imperial O. & G. Co.'s Stubbs 6, 14-19-3e, dk. Jordan Drlg. Co.'s Slagle 1, 48-18-4e, dk; Cole 1, 50-18-4e, set 12½-in at 186 ft. Montgomery et al's Johnson 1, 30-19-4e, dr 2070 ft. Natural Gas & Fuel Corp.'s McEnery 1, 21-19-4e, rig. Phillips Pet. Co.'s School Fee 1, 16-16-4e, set 8-in at 820 ft. Palmer Corp.'s Cole 4, 26-20-4e, dr 1740 ft. Southern Carbon Co.'s Fee 50, 18-19-4e, set 6-in at 2158 ft. Joe White Tr.'s Schmidt 1, 3-15-4e, tested dry at 2720 ft.

RAPIDES PARISH—Collins Bros.' Allen 1, 25-5-1w, sd 3010 ft. Glenmore Pet. Co.'s Fee 1, 1-2-2w, dr 3800 ft. Minnesota Oil Corp.'s Wettymark 2, 13-5-4w, sd 2320 ft.

RICHLAND PARISH—Dixie Oil Co.'s McCoy 1, 29-15-6e, tested sw at 2482 ft. J. M. Fuller's Boise 1, 33-16-6e, lcn. Feazel & Hemler's Perdue et al 1, 21-16-6e, dr 1501 ft. W. C. Feazel's Noble 1, 36-16-5e, dr 2430 ft. Gulf Ref. Co.'s Millsaps 1, 8-17-6e, dr 3477 ft; Rhymes 3, 28-17-6e, dr 3262 ft. Moody & Seagrave's McDonald 1, 9-15-5e, dr 2713 ft; Sartor B-1, 9-16-6e, dr 2190 ft. Natural Gas & Fuel Corp.'s Sartor B-3, 19-16-6e, dk; Sartor B-4, 8-16-6e, lcn; Thomason C-2, 21-16-6e, skidding dk; Thomasson C-3, 21-16-6e, pumping in mud to kill offset crater 2465 ft; Thomason C-4, 21-16-6e, pumping in mud to kill offset crater, 2466 ft. Oliver & Master's Morrison 1, 2-15-5e, set 15½-in at 150 ft; Hatch Heirs 1, 11-15-5e, set 15½-in at 150 ft. Ruston Drlg. Co.'s Sartor B-1, 9-16-6e, dr 2300 ft; Alexander 1, 4-16-6e, lcn; Etheredge 1, 28-17-6e, lcn. Southern Carbon Co.'s Sartor 3, 18-16-6e, rig; Sartor Jr. B-1, 9-16-6e, set 6-in at 2280 ft. Woodley Pet. Co.'s Osborne 1, 3-17-7e, sd 3131 ft.

SABINE PARISH—Doern et al's Pickering 1, 17-4-11, sd 2025 ft. R. L. Gay's Mansfield 1, 15-7-14, dr 2496 ft. Magnolia Pet. Co.'s Hall 1, 33-10-12, coring 3125 ft. The Texas Co.'s Hamlin Est. 1, 28-10-13, dr 2116 ft. Zwolle O. & G. Co.'s Bowman Hicks 7, 11-17-14, dr 3901 ft.

UNION PARISH—Carter et al's Hudson 1, 7-23-1e, sd 700 ft. Industrial Gas Co.'s Lewis 1, 14-20-3e, set 6-in at 2125 ft; Simpson 1, 9-20-3e, set 8-in at 901 ft; Harris 1, 24-20-3e, dk. R. W. Rhodes' Upshaw 1, 14-23-2w, dk. United Carbon Co.'s Peak 1, 7-20-4e, lcn; Trimble 1, 19-20-4e, rig.

WEBSTER PARISH—Allison et al's Lewis 1, 15-21-10, dr 2490 ft. Arkansas Nat. Gas Co.'s Mitchell 1, 30-23-9, dr 2688 ft. Dixie Oil Co.'s Cox 1, 15-21-10, dr 1787 ft. Humble's Webb 2, 14-21-10, dr 4206 ft; Bodcaw A-2, 14-21-10, rig; Davis 6, 14-21-10, set 10¾-in at 2819 ft; Cox 3, 22-21-10, rig. S. A. Lane's Miles 1, 24-17-9, sd 1469 ft. Louisiana Oil Ref. Corp's Lindsay 4, 22-21-10, dr 3000 ft; Crichton 5, 21-21-10, set 12½-in at 451 ft; Davis 1, 23-21-10, coring 4637 ft. C. H. Lyons' Porter-Wadley 2, 29-23-9, testing 2732 ft. Morris et al's Lewis 1, 15-23-9, sd 150 ft. Magnolia Pet. Co.'s Camp 1, 36-23-10, tested ¶½ at 2735 ft; Coyle 2, 21-21-10, rig; Cook 1, 2-22-11, dk; Sexton 1, 32-23-9, rig; Mixon 1, 22-21-10, milling out iunk 4347 ft; Wise 1, 30-23-9, dk; Aarnes Cox 3, 22-21-10, dr 2218 ft; D. G. Cox 1, 22-21-10, tested sw at 4752 ft; W. Cox 5, 15-21-10, rig; Mitchell 1, 31-23-9, blg 2661 ft; Merritt 5, 14-21-10. lcn. Ohio Oil Co.'s Haynes 1. 30-23-9, lcn; Bodcaw 39, 15-21-10, dr 2011 ft; Bodcaw 40, 15-21-10, dr 1518 ft; Bodcaw 41, 15-21-10, dr 1225 ft; Hodges 2, 23-21-10, lcn; Holloway 3, 23-21-10, arr to deepen 4411 ft. Palmer Corp.'s Mixon 1, 22-21-10, dr 3468 ft. Woodley Pet. Co.'s Duhe 2, 22-21-10, dk; Cox B-1, 23-21-10, arr to test 4695 ft.

WINN PARISH—Calvin Oil Co.'s Bodcaw 2, 9-11-4w, dk. Roark et al's Southern Mineral Lands 4, 19-11-3w, rig.

ARKANSAS

Completion

UNION COUNTY—		
Simroll et al, Finley 1, 12-17-14	*	3179

ASHLEY COUNTY—South Ark Nat. G. & F. Co.'s Holmes 1, 9-16-7, lcn.

BRADLEY COUNTY—Joe Hurley's Southern Lbr. Co. 1, 26-15-10, set 10-in at 21 ft. Johnson & Adams Southern Lbr. Co. 1, 12-12-12, sd 3138 ft.

CHICOT COUNTY — Joe Crawford et al's Cashion 1, 14-18-2, rig.

CLARK COUNTY — W. M. Henry Tr.'s Clark 1, 34-9-21, dr 1200 ft. McKenzie Oil Co.'s Eakin 1, 9-11-19, temporaily abnd 633 ft.

COLUMBIA COUNTY — Geo. Dawley's Gantt 1, 12-17-22, sd 1925 ft. Mitchell et al's Franks 1, 25-19-22, sd 150 ft. Van Hagen Synd.'s Pickler 1, 19-19-12, sd 850 ft; Mason 1, 31-19-22, rig.

DALLAS COUNTY—Dedman et al's Hillman 1, 20-10-13, dr 1690 ft.

GRANT COUNTY—Jones et al's Meeks 1, 5-4-11, sd 1400 ft.

LINCOLN COUNTY—Pine Prairie O. & G. Co.'s Carter 1, 33-10-6, sd 2176 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 2-13-31, sd 2941 ft.

MILLER COUNTY — Dave Bruton's Red River Farm 1, 2-17-26, dr 3292 ft. Lenze et al's Dale 3, 23-15-26, sd 3000 ft.

NEVADA COUNTY—Autrey Oil Co.'s Wells & Mays 1, 6-14-20, wosr 1188 ft. McDonald et al's Pelt 1, 9-15-22, sd 2424 ft. J. J. O'Brien's Haynie B-5, 1-14-21, sd 1163 ft.

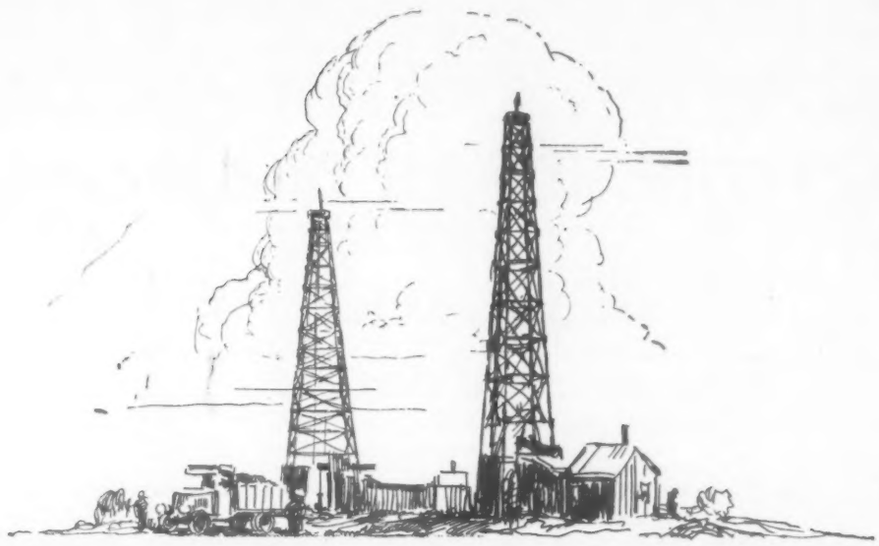
OUACHITA COUNTY — Buffalo Oil Co.'s Laughlin 1, 22-15-19, dk. Little Fay Oil Co.'s Robertson 7, 25-15-16, dr 1030 ft. Ohio Oil Co.'s Cramer 7, 22-15-16, r 3187 ft. Sinclair Oil Co.'s Berry A-7, 33-15-15, set 4½-in at 2640 ft. Skelly Oil Co.'s Umstead 10, 33-15-15, rig. F. B. Wood Tr.'s Spahr 1, 35-15-16, dr 2020 ft.

UNION COUNTY—Ark. Drlg. Co.'s Carroll 1, 1-17-14, set 12½-in at 150 ft; Rowland 1, 15-17-14, dr 3085 ft; Rowland 2, 15-17-14, lcn. O. W. Estes' Rowland 1, 14-17-14, dr 175 ft. Grimes Bros.' Hill 2, 7-18-14, rig. H. L. Hunt's Gregory 1, 10-17-14, dk. H. M. Johnson Tr.'s Kelly 1, 9-17-14, rig. W. R. Keever's Ezell B-3, 12-17-15, wosr 2129 ft; Ezell A-6, 12-17-15, rig. Lion O. & R. Co.'s Nash 1, 6-17-13, dk; Hays 8, 4-16-15, set 6⅝-in at 2338 ft; Murphy G-7, 8-16-15, set 6⅝-in at 2466 ft; Murphy H-3, 9-16-15, arr to deepen 2436 ft. Lyall et al's Stegall 1, 11-17-13, sd 2740 ft. Magnolia Pet. Co.'s Carroll 2, 1-17-14, sd 1500 ft; Carroll 3, 1-17-14, dk; Laney 3, 8-16-16, dk; Laney 4, 8-16-16, dk. Mellon Tr.'s VanHook 1, 7-18-14, wosr 2206 ft; Bullock 1, 7-18-14, wosr 2169 ft. Mountz et al's Pratt 6, 8-18-15, wosr 2200 ft. C. E. Murdock's Gregory 2, 10-17-14, dr 775 ft; Murphy 2, 17-16-15, sd 2117 ft. J. O. Moore Tr.'s Pagan 1, 18-18-11, arr to test 2650 ft. Magna Prod. Co.'s Rowland 2, 14-17-14, dr 3050 ft; Dumas 2, 11-17-14, dk; Dumas 3, 11-17-14, rig. Ohio Oil Co.'s Crain 4, 1-17-14, dk; Pumphrey 2, 1-17-14, set 10-in at 173 ft; Goodwin 2, 2-17-14, sd 3054 ft; Adams 1, 11-17-14, lcn; Lochnager 1, 11-17-14, lcn; Rowland 1, 15-17-14, dk; Smith 1, 1-17-14, dk. Ouachita Nat. Gas Co.'s Perdue 1, 33-16-14, lcn. Pure Oil Co.'s Gregory 2, 11-17-14, rig; Gregory 3, 11-17-14, rig; Gregory 4, 10-17-14, dk; Gregory 5, 10-17-14, lcn; J. M. Gregory 1, 11-17-14, dk; Gregory Estate 1, 15-17-14, dk. Rhodes Tr.'s Union Saw Mill 1, 14-19-11, arr to test 2794 ft. Rice et al's Heinman & Meyers 1, 23-18-16, rig. Rovenger Oil Corp.'s Perdue A-1, 10-17-14, rig. Dr. Rushing et al's Gregory 1, 11-17-14, flowing 4000 bbls 3208 ft; Gregory 2, 11-17-14, dr 2985 ft. Simon et al's Jerry 1, 21-17-14, set 10-in at 92 ft. Simmons et al's Green 1, 3-16-16, rig. Timberlake et al's Dumas 1, 11-17-14, dr 650 ft; Carnes 1, 27-13-17, set 10-in at 100 ft. F. B. Woods Tr.'s Spahr 2, 34-15-16, set 10-in at 61 ft.

KANSAS

BARBER COUNTY—T 30, R 14w, Sec 27, Rowland et al's Pickens 1, owd, ne cor nw ne, sd 3210 ft. T 31, R 12w, Sec 17, Merriman et al's Winters 1, c e ½, ur 3550 ft. T 33, R 12w, Sec 19, Schaffer et al's Boggs 1, c sw, dr 5250 ft. T 33, R 13w, Sec 2, Schaffer et al's Carter 1, c se se, fsh 3980 ft. T 34, R 13w, Sec 20, Barton Oil Co.'s Blunk 1, c ne nw, dr 3275 ft.

BARTON COUNTY—T 17, R 11w, Sec 34,



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McJolton et al's Evanston, sec nw, r. o. g. T 20, R 13w, Sec 12, Everett & Wiley's Ward 1, nwc sw, sd 3940 ft.

BUTLER COUNTY—Sec 22, Fleming et al's Brainard 1, ne c nw, lcn. T 24, R 8e, Sec 5, Mathews et al's Harsh 1, nec sw, dr 900 ft. T 25, R 4e, Sec 18, Wichita Drlg. Co.'s Joseph 1, nec se nw, ts 2730-36 ft, 400 ft oih T 27, R 3e, Sec 24, La Robb Oil Co.'s Baysinger 1, nec sw, rig. T 28, R 8e, Sec 21, Burford & Brimm's Ferris 1, sec ne sw, lcn. T 29, R 4e, Sec 21, E. Wilcox et al's Holcomb 1, nec se nw, sd 1456 ft. T 29, R 8e, Sec 8, Shawver et al's Nelson 1, nec se, td 3118 D. & A.

CHASE COUNTY — T 21, R 7e, Sec 9, Grener, Fowler et al's Carson 1, nec, sd 2150 ft.

CHAUTAUQUA COUNTY—T 32, R 8e, Sec 15, Roth & Faurot's Hanil 1, nwc sw nw, lcn.

CLARK COUNTY—T 32, R 21w, Sec 21, Watchorn O. & G. Co.'s Stephens 3, cel w½ nw nw, dr 745 ft.

CLOUD COUNTY—T 6, R 4w, Sec 6, Concordia Oil Co.'s Murdock 1, sec, sd 3590 ft.

COFFEY COUNTY—T 22, R 14e, Sec 8, Finney et al's Mitchell 1, sec ne, dr 1600 ft. T 22, R 15e, Sec 11, Clark et al's Douglas 1, nwc se ne, sd 920 ft.

COWLEY COUNTY—T 30, R 3e, Sec 3, Vickers Pet. Co.'s Daniels 1, nwc ne, sd 1650 ft. T 30, R 6e, Sec 20, Allison & Fitzwilliams' Manley 1, nec nw se, sd 1685 ft. Sec 36, Herron et al's Marshall 1, owd, swc ne, sd 1645 ft. Sec 18, Lewis Gas Prod. Co.'s Cook 1, nec sw, dr 325 ft. T 33, R 4e, Sec 4, White Oil Co.'s White 1, swc ne, dr 1860 ft. T 34, R 3e, Sec 10, Shawver et al's Amen 1, nwc, dr 3055 ft.

DICKINSON COUNTY—T 14n, R 4e, Sec 11, Phillips Pet. Co.'s Gugler 1, sec nw, dr 1985 ft. T 16, R 4e, Sec 2, Skow & Ritchey's Will 1, c nw nw, lcn. Sec 18, Gilliland Oil Co.'s Schlessner 1, c sw ne, dr 840 ft.

ELK COUNTY—T 28, R 13e, Sec 22, Price et al's Thompson 1, cel se sw, sd 400 ft.

ELLIS COUNTY — T 12, R 17w, Sec 25, Derby Oil Co.'s Weigle 1, c nw, dr 2475 ft. T 13, R 19w, Sec 21, Thomas & Moncreif's Boettcher 1, c sw, lcn.

FRANKLIN COUNTY—T 16, R 18e, Sec 17, Smith, Thrice & Fisher's Owens 1, cel e½ e½, sd 1450 ft. T 17, R 17e, Sec 25, Omar O&G Co.'s Bush 1, sec sw, lcn.

GEARY COUNTY—T 12, R 7e, Sec 10, Pioneer Pet. Co.'s Chase 1, esc, dr 2000 ft.

GREENWOOD COUNTY—T 25, R 12e, Sec 12, Sheedy et al's Gilroy 1, swc se, dr 900 ft. T 26, R 11e, Sec 28, Paul & Parker's Wiley 1, swc se nw, spd and sd.

GRAHAM COUNTY—T 8, R 25w, Sec 27, Gulf Coast Drlg. Co.'s St. John 1, owd, swc nw se, dr 3490 ft.

HARPER COUNTY—T 34, R 6w, Sec 24, Amerada Pet. Corp.'s Mendenhall 1, c se se, dr 4990 ft.

JACKSON COUNTY—T 8, R 14e, Sec 3, Smith et al's Wabunce 1, nec nw, dr 1140 ft.

JEFFERSON COUNTY—T 9, R 19e, Sec 13, Norther Counties' Edwards 1, sec nw nw, sd, 2405 ft. T 10, R 17e, Sec 19, Wichita Oil Co.'s Simpson 1, nwc sw sw, rig.

LABETTE COUNTY—T 33, R 17e, Sec 1, Cowell et al's Hornbeck 1, swc ne sw, sd 1375 ft.

McPHERSON COUNTY—T 17, R 1w, Sec 18, Galt-Brown et al's Fross 1, c ne, rigging. T 20, R 3w, Sec 20, Polar Oil Co.'s Grey 1, c nw, spd and sd. T 21, R 3w, Sec 9, Herron et al's Voshell 1, nec, spd and sd.

MARION COUNTY—T 17, R 3e, Sec 13, Rosenthal et al's Talchman 1, nwc sw sw, spd and sd. Sec 17, Frank et al's Reed 1, nwc, td 2841 ft, p. b. 2400 ft, sd.

MEAD COUNTY — T 33, R 28w, Sec 9, Blackwell O&G Co.'s Lilly 1, c se, dr 3475 ft.

MORRIS COUNTY—T 14, R 7e, Sec 32, Klein et al's Ba ber 1, sec nw, rig. T 16n, R 9e, Sec 22, Lambert et al's Southard 1, swc se, lcn.

NEMAHA COUNTY—T 3, R 11e, Sec 19, Nemeha O. & G. Co.'s Myers 1, nwc, sd 3050 ft.

OSBORNE COUNTY—T 9, R 15w, Sec 30, Davis et al's Pruter 1, sec sw, dr 2950 ft.

OSAGE COUNTY — T 15, R 15e, Sec 3, Barber et al's Lease 1, c se se, sd 260 ft. T 15, R 16e, Sec 27, West et al's Bailey 1, swc ne, sd, 600 ft. T 17, R 17e, Sec 8, Mull Vit Dev Co.'s Neil 1, nw c sw ne, sd 2931 ft.

POTTAWATOMIE COUNTY—T 9, R 8e, Sec 7, Shaw et al's Washington 1, sec, lot 17, rig. T 10, Range 12e, Sec 11, Crawford et al's St. Mary 1, swc, sd 2290 ft.

RENO COUNTY—T 22, R 4w, Sec 6, Danciger et al's Williams 1, nec sw se, rig.

RILEY COUNTY — T 10, R 7e, Sec 20, T 10, R 7e, Sec 20, Welton Oil Co.'s Thierer 1, nw c, dr 3020 ft.

ROOKS COUNTY — T 8, R 16w, Sec 14, Krueger et al's Poor 1, nec, spd and sd.

RUSH COUNTY—T 17, R 17w, Sec 27, Valerious O. & G. Co.'s Schreverman 1, c nw, dr 1115 ft.

SEDGEWICK COUNTY—T 26, R 1w, Sec 12, Gypsy, Marland et al's Wright 1, sec ne se, dr 1180 ft.

SEWARD COUNTY—T 33, R 33w, Sec 14, Ash et al's Son, owd, nec, dr 3200 ft.

SHERMAN COUNTY—T 7, R 40w, Sec 20, Hanson et al's Murry 1, owd, nec sw nw, dr 2990 ft.

STAFFORD COUNTY—T 21, R 11w, Sec 23, Harper et al's Siffers 1, owd, nwc sw nw, 4176 ft, td D. & A.

SUMNER COUNTY—T 33, R 3w, Sec 22, Otstot Dev. Co. et al's Bartlow 1, sec, sd 1860 ft. T 34, R 2e, Sec 1, Endfield & Foster's Houston 1, c ne sw, dr 730 ft. T 34, R 2w, Sec 23, Gypsy Oil Co.'s Douglas 1, nec se nw, tc 4493-99 ft, 16 bbls per hour. Shut in. T 34, R 3w, Sec 4, Jarvis et al's Wernecke 1, sec sw, dr 4207 ft. T 34, R 4w, Sec 11, Jarvis et al's Wernecke 1, sec sw, dr 4207 ft. T 34, R 4w, Sec 11, Jarvis et al's Wycoff 1, swc nw, dr 4582 ft. T 35, R 1e, Sec 9, Otstot et al's Volker 1, nwc ne, rig.

TREGO COUNTY—T 13, R 21w, Sec 20, Central Commercial Oil Co.'s Ellis-King 1, nec sw ne, sd 315 ft.

WABUNSEE COUNTY—T 11, R 10e, Sec 24, Doric Oil Co.'s Jones 1, nec sw, sd 1530 ft. T 13, R 12e, Sec 15, Eskridge Oil Co.'s Henderson 1, nec sw ne, 3700 ft, sd.

WOODSON COUNTY—T 24, R 14e, Sec 32. Spencer & Rainey's Kimball 1, sec ne, sd 1729 ft. T 24, R 16e, Sec 3, Fees et al's Roberts 1, nwc ne, sd 1418 ft.

OKLAHOMA

GRANT COUNTY—T 28n, R 3w, Sec 6, Otstot Dev. Co.'s Snyder 1, nec, sd 4518 ft.

HARPER COUNTY—T 27n, R 21w, Sec 24, A. F. Kopisch Oil Co.'s Selman 1, nec se, spd and sd.

WOODS COUNTY—T 27n, R 15w, Sec 20, Sooner State Oil Co. and E. R. Black's Marcum 1, c sw, spd and sd.

GRANT COUNTY—T 27n, R 5w, Sec 18, J. W. Bailey et al's Custard 1, c se, ts 4835-47 ft, 800,000 gas, to lower 4-in circulating.

KAY COUNTY — T 27n, R 2w, Sec 23, Boucher et al's Cooper 1, sec, water 2580-90 ft, ur 8-in 2970 ft.

GRANT COUNTY—T 26n, R 4w, Sec 34, Sooner State Oil Co.'s Royce 1, swc nw, sd 550 ft.

KAY COUNTY—T 26n, R 2e, Sec 32, J. A. Vincent & National Union Oil Co.'s McNeal 1, nwc ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft.

GRANT COUNTY—T 25n, R 4w, Sec 22, Cowden's Vallner 2, nec se ne sw, lost tools at 5640 ft, sd.

KAY COUNTY — T 25n, R 1w, Sec 15, Tonkawa Dev. Co.'s McDaniels 1, sec, dr by bit.

NOBLE COUNTY—T 24n, R 3e, Sec 11, Geo. Miller et al's Howe 1, c nw se, bldg rig. T 21n, R 1w, Sec 7, R. L. Corley's Williams 1, sec ne sw, sd 1920 ft. T 20n, R 1w, Sec 32, Marland Oil Co. et al's Kidd 1, nw c sw, cmtg 8¼-in at 4095 ft, td.

CIMARRON COUNTY—T 6n, R 2e, Sec 24, Jake G. Phillps' School Land 1, se ne ne, hfw in granite wash 4209 ft, td 4370 ft, D. & A. T 5n, R 5e, Sec 21, Ramsey Pet. Co.'s State Land 1, swc ne sw sw, run 6-in 4130 ft, td. Sec 27, Ramsey Bros' State Land 1, c nw ne, 4090-4140 ft, show 35 bbls, hfw 4680 ft, pb to 4040 ft, sd. T 4n, R 1e, Sec 34, Ramsey Pet. Co.'s School Land 1, c se, td 4306 ft, D. & A.

BEAVER COUNTY—T 4n, R 25e, Sec 22, O. H. Bonner et al's Maple 1, c se ne, rig, abnd.

CIMARRON COUNTY—T 2n, R 9e, Sec 2, Fenton, Brookins & Flowers' Smaltz 1, swc ne ne, spd and sd.

TEXAS COUNTY—T 2n, R 18e, Sec 23, Connelly, Trammell & Danner's Graves 1, nec sw sw, sd 315 ft.

TEXAS COUNTY—T 1n, R 15e, Sec 26, Hydraulic Oil Co.'s Hitch 1, nec, 600 ft, td, abnd. T 1n, R 18e, Sec 11, Three Way Oil Co.'s Price 1, sec nw, ts 3318-58 ft, hfw, sd 3490 ft. T 1n, R 19e, Sec 5, Trammell, Connelly & Danner's Taney 1, sec nw, sd 280 ft.

WOODWARD COUNTY — T 24n, R 17w, Sec 32, Otstot Dev. Co.'s Simmons 1, sec, sd 1500 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec 9, Pulse & Beamer's White 1, sec nw, sd 4720 ft. T 24n, R 3w, Sec 14, Sagar Oil Co.'s Garsarch 1, sec at 4767 ft dr by cas. T 22n, 5w, Sec 3, Ashby & Barr's Swinery 1, nw c, sd 740 ft.

ELLIS COUNTY — T 21n, R 25w, Sec 9, Oklahoma Northern Oil Co.'s 1, c se nw, sd 300 ft.

WOODWARD COUNTY — T 21n, R 19w, Sec 15, Burgoyne Bros.' 1, swc se ne, sd 800 ft. T 21n, R 21w, Sec 25, Sharon's Elmore 1, swc, sd 2778 ft.

GARFIELD COUNTY—T 21n, R 4w, Sec 12, Beopple et al's Schriver 1, cel sw sw ne, sd 1850 ft. T 20n, R 4w, Sec 9, Marland's Looman 1, nec se, sd 5735 ft. Sec 12, Marland's Miller 1, sw cor, sd 4586 ft.

DEWEY COUNTY—T 18n, R 15w, Sec 9, Huckelby & McCoy's Perfect 1, nec, dr 3300 ft.

LOGAN COUNTY—T. 18n, R 4w, Sec 6, Davis & Browning's Woods 1, nec se, lcn. T 18n,R 3w, Sec 33, Haley & Consolidated Drlg. Co.'s Quier 1, sec sw, show gas 3905 ft, sd for 5-in. T 17n, R 1e, Sec 20, T. B. Slick's Signs 1, nwc sw, sd 5067 ft. Sec 28, T. B. Slick's Berry 1, swc se, td 5730 ft, pb to 4700 ft.

KINGFISHER COUNTY—T 16n, R 7w, Sec 6, Gault-Brown Oil Co.'s Campbell 1, c nw se, dr 4120 ft. T 16n, R 6w, Sec 27, Crawford & McKenna's Sturgeon 1, nec sw, sd 4509 ft. T 16n, R 5w, Sec 26, Gault-Brown Oil Co.'s Johnson 1, c nw, sd 4512 ft.

LOGAN COUNTY—T 16n, R 1w, Sec 28, Blackford O&G Co.'s Lair 1, csl n½ se, sd 1675 ft. T15n, R 1w, Sec 12, Bu Vi Bar's Kirkpatrick 1, c sw, dr 5245 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec 9, A. D. Spears' Piatt 1, sec ne, sd 3223 ft.

OKLAHOMA COUNTY—T 13n, R 3w, Sec 18, Slick & Bailey 1 Lufkin, c ne se, co 4112 ft. T 12n, R 3w, Sec 15, Cromwell et al 1 Thompson, swc ne ne, 1000 ft tubing and cement in hole, td 6870 ft.

CANADIAN COUNTY—T 11n, R 7w, Sec 9, Ramsey Bros. 1 Newman, csl ne, rust 4491 ft. T 10n, R 6w, Sec 1, J. M. V. Bailey 1 Robinson, c ne nw, spd and sd.

OSAGE COUNTY—T 26n, R 7e, Sec 30, Prod. & Refs. & C. B. Peters 1, sec ne, rig and tools. T 23n, R 10E, Sec 7, Sheeders O. & G. Co. 1, c ne, fsh tools 2340 ft.

PAYNE COUNTY—T 19n, R 1e, Sec 33, Gardner Pet. Co. et al 1 Ham, c sw ne, dr 4630 ft.

LINCOLN COUNTY—T 17n, R 3e, Sec 20, Willis O. & G. Co. Gun 1, nwc se, ts 4636-11 ft, water and sd. T 17n, R 5E, Sec 27, Flynn & Morgan Smith 1, sec ne nw nw, dr 3947 ft. T 13n, R 4E, Sec 16, Bu-Vi-Bar School Land 1, c ne se, sd 4500 ft.

TULSA COUNTY—T 17n, R 13e, Sec 1, E. A. Hawley Taylor 1, sec ne, spd and sd.

CREEK COUNTY—T 14n, R 9e, Sec 1, L. C. Wheeler & King Morton 1, sec nw, lcn.

OKFUSKEE COUNTY—T 12n, R 10e, Sec 8, Blakely et al Yarhola 1, swc se nw, sd 3157 ft. T 11n, R 10E, Sec 4, Moose & Daniels Stidham 1, swc nw, sd 622 ft.

MUSKOGEE COUNTY—T 15n, R 18e, Sec 12, York O. & G. Co. Jobe 1, nwc se, show oil at 1100 to 1110 ft, dr 1790 ft. T 13n, R 17E, Sec 34, Elk Dr. Co. McKee 1, csl se se se, sd 160 ft. T 13, R 18E, Sec 33, L. T. Haynie Linder 1, c se, sd 1766 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec 32, Pattison et al McDuff 1, swc nw se, 3 m gas at 4472-2525 ft, co 4730 ft.

HASKELL COUNTY—T 9n, R 18e, Sec 10, Marion Oil Co. Sanders 1, nwc ne sw, sd 2250 ft.

LATIMER COUNTY—T 5n, R 18e, Sec 15, Limestone O. & G. Co. Murray 1, swc sd 1700 ft.

CLEVELAND COUNTY—T 10n, R 2w, Sec 22, Cromwell & Franklin Donavan 1, c sw, sd 4706 ft.

POTTAWATOMIE COUNTY—T 10n, R

BITULUMIN REDUCES EVAPORATION —INCREASES SURFACE PROTECTION

Read these facts

OFFICIAL COMPARATIVE TESTS OF EFFECT OF TANK COLORS ON EVAPORATION LOSSES OF CRUDE OIL

Serial No. 2677, March, 1925

Report by Ludwig Schmidt, Associate Petroleum Engineer, U. S. Bureau of Mines.
Duration of tests: January, 1924, to January, 1925.

COLOR	Initial Gauge Barrels	Loss by Barrels	Evaporation %	Loss in Gravity A. P. I.
Black	52058	649	1.24%	.60
Red	53294	609	1.14%	.50
Gray	53192	547	0.99%	.30
Aluminum	53418	447	0.83%	.20

Bitulumin successfully resists paint's two worst enemies, sunlight and moisture. It is largely immune to Ultra Violet rays which break down paint surface, allowing moisture to penetrate.

Bitulumin turns away approximately 86% of harmful sunrays, thus keeping tanks and contents cooler and minimizing evaporation.

Bitulumin forms a light resisting, durable and moisture proof surface. It will outlast the best lead and zinc paints by two to one.

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GEORGE EBA, Okmulgee, Okla.
ROY RICHARDSON, Breckenridge, Texas
A. J. FROGEE, Breckenridge, Texas
H. N. ROBINSON, Coleman, Texas
ORVILLE WINEMAN, Borger, Texas
GARRY YOUNG, Colorado and Wink, Texas
PETE BURDETTE, Crane, Texas
WALTER JOHNSTON, Owensboro, Ky.
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L. A. DUNCAN, Casper, Wyoming
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3e, Sec 12, Sikes, Kilgore & Shaffer Ives 1, c se se, 5327, cementing cave. T 10n, R 4e, Sec 28, Central Nat'l Oil Co. Toney 1, swc, 4323 ft, td d&a.

SEMINOLE COUNTY—T 10n, R 6e, Sec 3, Furhman Davis 1, sw se, lcn. T 10n, R 7e, Sec 6, Blackwell O. & G. Co. Bean 1, sec ne sw, dr 3270 ft. Sec 18, Shaffer et al Jones 1, swc ne, dr 580 ft.

POTTAWATOMIE COUNTY—T 8n, R 2e, Sec 24, Superior Oil Corp. Jones 1, sw nw ne, dr 4387. T 8n, R 4e, Sec 1, Amerada Pet. Gravel 1, sw se ne, hfo at 4114-95 ft, td 4485 pb.

HUGHES COUNTY—T 8n, R 10e, Sec 1, Bauer et al Penn 1, nwc sw ne, cellar.

CLEVELAND COUNTY—T 7n, R 1w, Sec 15, Sooner State Oil Co. Vandeveer 1, ne nw sw, 8 in at 2994 ft and sd.

POTTAWATOMIE COUNTY—T 7n, R 2e, Sec 17, T. B. Slick Spangler 1, nw se nw nw, dr 1775 ft.

SEMINOLE COUNTY—T 7n, R 6e, Sec 7, Simon & Beam Palmer 1, ne nw ne, rig.

POTTAWATOMIE COUNTY—T 6n, R 2e, Sec 10, Davis, Detrick et al McGahel 1, sec nw, sd 4988 ft. T 6n, R 5e, Sec 16, T. B. Slick School Land 1, sec, dr 3515 ft. Sec 20, Roxana Pet. Corp. Jackson 1, nec se ne, lcn.

SEMINOLE COUNTY—T 6n, R 6e, Sec 1, T. B. Slick Moore 1, sw ne sw, setting 5 in at 2785 ft.

SEMINOLE COUNTY—T 6n, R 7e, Sec 5, Magnolia Vierson 1, sec nw, hfw 4535 ft d&a. T 5n, R 6e, Sec 13, T. B. Slick Barrett 1, nec se nw, td 3998 ft hfw d&a.

HUGHES COUNTY—T 5n, R 9e, Sec 17, E. W. Whitney Huddleston 1, sec sw, fsh 850 ft. Sec 20, Noble O. & G. Co. et al Wickett 1, sec, dr 1920 ft.

GARVIN COUNTY—T 4n, R 1e, Sec 15, Dixie Oil Co. Perkins 1, sec sw, dr 5360 ft. T 4n, R 3e, Sec 10, Garland Oil Co. Strickland 1, sw nw sw, dr 2680 ft.

PONTOTOC COUNTY—T 4n, R 6e, Sec 13, American O. & R. Co. Wright 1, nw ne ne, sd 2190 ft.

HUGHES COUNTY—T 4n, R 9e, Sec 14, Clark & Cowden Burrow 1, c nw ne, sd 2435 ft.

GARVIN COUNTY—T 3n, R 1e, Sec 12, Magnolia Vaughn 1, nw sw nw, dr 5522 ft.

PONTOTOC COUNTY—T 3n, R 8e, Sec 10, Douglas Oil Johnson 1, c nw nw, dr 250 ft.

COAL COUNTY—T 2n, R 8e, Sec 5, Wichtex Oil Co. Folsom 1, c nw nw, lcn.

MURRAY COUNTY—T 1n, R 2e, Sec 17, Revels & McGee Wolfe 1, nwc, dr 460 ft.

COAL COUNTY—T 1n, R 8e, Sec. 35, W. E. McGraw et al Patton 1, swc se ne, cementing 10 in 1595 ft. T 1n, R 9e, Sec 24, Galbreath et al Jones 1, swc se, spd and sd.

CADDO COUNTY—T 10n, R 12w, Sec 28, Magnolia Shelby 1, swc, dr 2718 ft.

BECKHAM COUNTY—T 9n, R 22w, Sec 32, O. & H. Pet. Co. Barnes 1 (owd), sd 3080 ft with 300 ft oih.

GRADY COUNTY—T 9n, R 5w, Sec 13, Remington Fulton 1, swc ne, sd 720 ft.

KIOWA COUNTY—T 7n, R 15w, Sec 35, David Malernee Van Kirkland 1, nwc, td 621 ft, crooked hole-shot 50 qts co. T 6n, R 15e, Sec 6, Johnson McDowell 1, c sw ne, sd 770 ft.

CADDO COUNTY—T 6n, R 12w, Sec 29, W. J. Hartley Gilbreath 1, sec nw se (owd), sd 3394 ft.

KIOWA COUNTY—T 5n, R 14w, Sec 17, Blue Mtn. Oil Co. Jones 1, se nw nw, sd 530 ft.

GRADY COUNTY—T 4n, R 7w, Sec 21, Commercial Dr. Co. Crisman 1, c ne ne, dr 1702 ft.

COMANCHE COUNTY—T 3n, R 10w, Sec 24, Jolly-Ogg Sparlin 1, sec ne, dr 2733 ft.

STEPHENS COUNTY—T 2n, R 5w, Sec 20, Martin & Smythe Vestal 1, c ne se, lcn.

COMANCHE COUNTY—T 1n, R 12w, Sec 14, Greene et al Wilson 1, cemented 5 in at 3315 ft, dr plugs.

JACKSON COUNTY—T 1s, R 20w, Sec 23, Stanley McGregor 1, swc nw, lcn.

KIOWA COUNTY—T 2s, R 16w, Sec 6, Landfair 1, se sw se, dr 2450 ft.

STEPHENS COUNTY—T 3s, R 7w, Sec 7, Pace et al Absner 1, nwc, dr 1415 ft.

JEFFERSON COUNTY—T 5s, R 8w, Sec 28, Amerada Emerson 1, nwc se sw, dr 1232 ft.

MARSHALL COUNTY—T 4s, R 4e, Sec 35,

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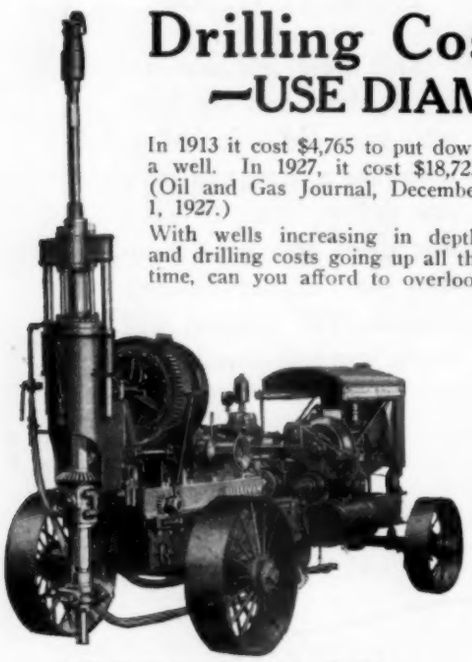

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Wirt Franklin Pet. Corp. Foster 1, sec sw sw nw, dr 200 ft. T 5s, R 4e, Sec 11, Bilbo Chapman 1, nec nw ne, sd 380 ft.

NORTHERN CALIFORNIA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
PIRU—		
Leonard Oil Co., 1, 4-4-19.....	*	4295
GOULD HILLS—		
Cymric Oil Co., Porter 1, 36-28-20..	*	2530

ARVIN—Calif. Pet. Corp.'s 1, 22-31-29, new lcn.

BAKERSFIELD—Pacific Eastern Prod. Co.'s KCL 1, 6-30-28, sd 5640 ft; KCL 2, 6-30-28, testing above plug at 4310 ft. Jackson and Chamberlain's 1, 19-29-28, sd 425 ft.

BELRIDGE—Zurich Oil Co.'s 1, 18-28-22, made small amount gas on test, td 2785 ft; 1-A, sw¼ 18-28-22, new lcn.

BUTTONWILLOW—McAdams Trustee's 1, 26-29-23, testing gas showings 4685 ft, td 5955 ft. Milham Exploration Co.'s 5, 5-28-23, 15½-inch cas cmt 500 ft.

COMANCHE POINT—W. W. Stabler's 1, 23-32-29, dr shale 2366 ft.

DELANO—No. American Cons. Oil Co.'s 1A, 5-25-25, dr gray sand 5570 ft.

DEVILS DEN—All wells sd in this area.

EDISON—General Pet. Corp.'s Kerwin 1, dr brown shale 4595 ft. Midway Northern Oil Co.'s B1, 292-29-30, dr gray sand 3313 ft. Superior Oil Co.'s B-1, 31-30-28, sd 3208 ft.

GREENFIELD—J. E. O'Donnell's Houghton 1, 31-30-28, dr brown shale 3680 ft.

GOULD HILLS—Cymric Oil Co.'s Porter 1, 36-28-20, abn 2530 ft. Porter 2, 36-28-20, new lcn. Exeter Oil Co.'s 1, 1-29-20, deepening from 835 ft. Myrtle Oil Co.'s 1, 8-29-21, co 930 ft. H. Robinet's 1, 2-29-20, dr brown shale 482 ft.

McFARLAND—General Pet. Corp.'s Stiles 1, 35-25-25, new lcn.

McKITTRICK—No active operations in this district.

SHALE HILLS—No active operations in this district.

SHAFTER—Max McVey's 1, 8-28-25, lcin.

SEMITROPIC—Semitropic Oil Co.'s Kerwin 1A, will deepen from 1560 ft.

TEHACHAPI—Brown-Hammond Oil Co.'s 1, 14-11-9, rigging cable tools. Crusaders Oil Co.'s 1, 21-10-10, co 2370 ft.

WILLOW SPRINGS—C. Wicker's 1, 9-9-15, rig.

SANTA BARBARA COUNTY

GOLETA — Barnsdall's Edwards 2, 1-4-30, prod small quantity oil and gas, td 2455 ft.

SANTA BARBARA—Channell Oil and Dev. Co.'s 1, 29-4-27, swabbing water 6025 ft. Petroleum Exploration Co.'s 1, 20-4-27, dr hard sand 3730 ft.

SUMMERLAND—Summerland Oil Co.'s 1, 22-4-26, trying for water shutoff, 3045 ft.

VENTURA COUNTY

BARDSDALE—Triple A Investment Co.'s 1, 5-3-19, fsh for dr pipe 2275 ft.

FILLMORE—No active wells in this district.

OJAI—Continental's Fox 1, sw¼ 21-4-22, sp. J. W. Hackworth's M-1, 11-4-23, fsh for dr pipe 2215 ft.

OXNARD—Shell's Grub 1, 22-2-22, 18-in cas cmt 605 ft, td 655 ft.

PIRU—Leonard Oil Co.'s 1, 4-4-18, abn 4295 ft. Petroleum Securities Co.'s 1, 26-5-10, made small amount oil on test at 4565 ft, co to run 6⅝-in cas.

RINCON—Scott Petroleum Co.'s 1, 35-4-25, recmt 8⅝-in cas 3830 ft, td 3895 ft.

RED MOUNTAIN—Miley Explo. Co.'s Casitas 2A, 7-3-23, will deepen from 755 ft.

SANTA PAULA—W. W. Bryant's 2, 21-4-21, sr 500 ft.

SATICOY—Standard's Ferro 1, 11-2-22, dr gray sand 1362 ft.

SIMI—Emma F. Exline's 1, 32-5-21, dr 1475 ft. Shell's Berylwood 1, sr 7185 ft; Strathern 1, 6-2-18, co 3530, td 4735 ft.

SOUTH MOUNTAIN—Ring Pet. Co.'s C-1, dr shale 4116 ft.

MISCELLANEOUS

COLOUSA COUNTY—Continental's 1A, 31-18-4, fsh for dr pipe 4300 ft.

HUMBOLDT COUNTY—Northern Counties Oil Co.'s 2, 36-2-1, dr hard sand 2093 ft.

KINGS COUNTY—Milham Explo. Co.'s El-

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Type "B"

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THE NATIONAL SUPPLY COMPANIES

SAFETY PULLING MACHINE COMPANY

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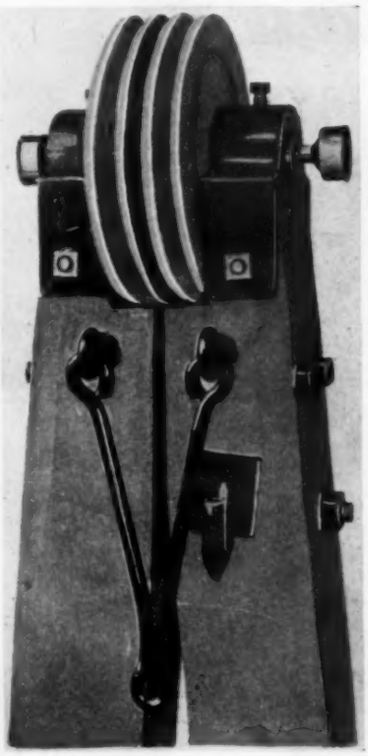

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Either the complete Machine or the Stripped Derrick equipped as above.

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INDEPENDENCE, KANSAS

P. O. BOX 525

liott 1, fsh for dr pipe, td 7236 ft. All other wells in this district are idle.

MONTEREY COUNTY—Marland's N-1, 34-24-11, sad tr 2480 ft, td 2795 ft.

SAN LUIS OBISPO COUNTY—Arroyo Grande Oil Co.'s 1, 21-32-13, plugged to 4365 ft. Panorama Oil Co.'s 1, 7-31-21, sr 2070 ft. Paso Robles Oil Co.'s 1, deepening from 1965 ft. Richfield Oil Co.'s C-1, 15-29-17, dr 3688 ft. San Luis Synd.'s 1, 29-31-13, dr hard sand 2644 ft. Union's Russ 1, 34-32-15, dr 2060 ft.

SAN MATEO COUNTY—Shell's Butts 1, 21-6-5, dr 2580 ft; Cowell 2, 8-6-5, repairing equipment, td 315 ft.

SANTA CLARA COUNTY — Continental's Sargent 3, dr 3010 ft.

SONOMA COUNTY—Shell's Mossi 1, 8-5-7, coring 1800 ft.

TULARE COUNTY—Ducor Drilling Co.'s 1, 29-23-27, dr up iron, td 4160 ft.

SOUTHERN CALIFORNIA

CLAREMONT—Claremont O. & G. Co.'s 1, sd 1130 ft.

CALABASAS—Easton and Smith's 1, 19-1-17, dr hard sand 1080 ft.

COSTA MESA—Mesa Pet. Co.'s BG1, 16-6-10, sd 2980 ft.

CYPRESS—Ohio Oil Co.'s Miller 1, 9-4-11, dr 5560 ft.

DAVIDSON CITY—Calif. Well Drilling Co.'s 1, 11-4-13, dr out cmt 7555 ft.

DOMINGUEZ — Dominguez Extension Oil Co.'s 1, 22-3-13, repairing pipe, td 5510 ft.

EL SEGUNDO—Southern Calif. Drilling Co.'s Matteson 1, sd 4865 ft.

FULLERTON—Shell's Stern 1, 22-3-10, dr hard sand 5050 ft.

HAWTHORNE—San Clemente Oil Co.'s Peck 1, sdtr cas 5170 ft, td 5765 ft.

HUNTINGTON—Calnan Pet. Corp.'s SW1, sd 5107 ft.

INGLEWOOD—Hurst Oil Corp.'s Simons 1, sd 3740 ft.

LANCASTER—Otis Andrews' 1, 23-8-13, dr 2080 ft. J. B. Harding's La Loma 1, 27-7-11, plugged to 872 ft, will test.

LYNWOOD—Security Pet. Corp.'s 1, 13-3-13, dr hard sand 4900 ft.

MONTEREY PARK—Monterey Park Pet. Co.'s 1, 26-1-21, sd 4530 ft.

NEWHALL—W. W. Stabler's Castaic 1, sd 3410 ft.

POTRERO — Associated's Cypress 1, gas blowout at 4260 ft, prod about 16,000,000 cu ft gas.

PUENTE HILLS—Anchor Pet. Co.'s Hudson 1, dr 2314 ft.

SAN FERNANDO—Shell's Mission 2, dr hard sand 1082 ft.

SAN JOSE HILLS—B. and B. Oil Co.'s Amar 1, plugged to 2600 ft.

SEAL BEACH—George F. Getty's 1, sd 5520 ft.

SUNSET BEACH—Olympic Oil and Ref. Co.'s 1, may resume dr, to 5560 ft.

SAN JUAN CAPISTRANO—O. K. Carr's Forster 2, sd 4185 ft.

TELEGRAPH CANYON—Quadra Pet. Co.'s 1, sd 4210 ft.

WATTS—Southwest Pet. Corp.'s Ramsaur 1, sd 4300 ft.

WATSON—White Behr Oil Co.'s 1, 2-4-13, dr hard gray sand, 5290 ft.

WESTMINSTER—McCullom and Taylor's 1, 18-5-10, dr shale 1376 ft.

YORBA—Standard's 1, 27-3-9, dr gray sand 5702 ft.

MISCELLANEOUS

RIVERSIDE COUNTY—Hemet Pet. Corp.'s Ward 1, dr hard sand 2695 ft. Spindletop Oil Synd.'s 1, 25-7-10, dr shale 3280 ft. Trabuco Oil Co.'s 1, dr hard sand 3445 ft.

SAN BERNARDINO COUNTY—Colton Terrace Oil Co.'s 1, sd 1705 ft. Hesperia Oil & Gas Co.'s 1A, plugged to 2300 ft, testing. Western Pacific Oil Co.'s 3, dr shale 3063 ft.

SAN DIEGO COUNTY—Davenport O. & G. Co.'s 1, dr 453 ft. Torrey Pines Oil Co.'s MacGregor 1, dr sand 1790 ft. Stanley S. Turner's Baler 1, dr 617 ft.

EAST TEXAS

CASS COUNTY—Hickman et al's Mott 1, A. Douthitt sur, dr 2646 ft.

HARRISON COUNTY — Baca Oil Co.'s Roseborough 1, E. Carroll sur, arr to deepen 1440 ft. Magnolia's Vincent 2, R. W. Bedford sur, coring 2367 ft. Mitchell et al's Jones 1, J. Lipscomb sur, sd 966 ft.

MARION COUNTY—Lumbermans Oil Co.'s Bonham 1, R. Potter sur, sd 1200 ft.

PANOLA COUNTY—J. H. Dickson's Cummings 1, J. Johnson sur, rig. R. E. Davidson's Johns 1, W. H. Woodley sur, rig. H. Hines' Baker 1, G. Goodwin sur, sd 2967 ft. Lieuallen & Hasenfuss' Hall 1, E. P. Mitcheson sur, dr 1800 ft. Magnolia Pet. Co.'s Adams 1, J. M. Birdsong sur, coring 2430 ft; Richardson 1, B. Lovell sur, dr 1766 ft; Leigh Trosper 1, B. Stephens sur, coring 2601 ft; Vance 1, J. Womack sur, dr 1358 ft. Natural Gas Prod. Co.'s Adams 5, E. Bracken sur, set 10-inch at 102 ft; Roquemore 3, B. C. Jordan sur, set 10-inch at 130 ft. D. Thomasson's Crenshaw 5, B. C. Jordan sur, set 8-inch at 963 ft. The Texas Co.'s Adams A-4, J. Womack sur, set 10-inch 40 ft; Brumble 3, E. Bracken sur, dr 700 ft.

SHELBY COUNTY—Magnolia's Pickering 1, Wm. J. Crane sur, dr 2020 ft.

SOUTHWEST TEXAS

Completions

DUVAL COUNTY—			
Partee et al, Hahl 1, Sec 250		*	2400
Houston Oil Co., Woods-Welder 1, Sec 233		*	3485
Magnolia, Benavides 3, Hale subdiv. Arispe grant		¶20	1540
JIM HOGG COUNTY—			
Shaw, Jones 1, Sec 381, blk 12		*	2508
WEBB COUNTY—			
Cole Pet. Co., Benavides 56, Sec 412, blk 3, w side Cole field		200	2334
Magnolia, Garcia 1, Sec 53, Schott field		*	4190
ZAPATA COUNTY—			
Hill, Reiser and Weed, Rodriguez 1, blk 1, Hill subdiv, Villa grant		*	1060

CALDWELL COUNTY — Datex Oil Co.'s August 1, Branyon district, dr 200 ft, shale. Smith et al's Lancaster 1, Branyon district, dr 1750 ft. Davis et al's Young 1, Branyon district, ru. Dixon et al's Teas 1, Branyon district, dr 670 ft, shale. Roxana Pet. Corp.'s Medford 1, Branyon district, set surface cas. Weinert & Carter's Branyon 1, Branyon district, ru. United North & South Dev. Co.'s Branyon 1, Branyon district, ru. Joe Bruner et al's Wilson 1, will resume drilling. Radliff et al's Briscoe 1, mi ne Luling, standing. United North & South's Tiller 2, Luling, dr schist 7298 ft; Kelly 1, Luling, dr 7630 ft, schist.

DUVAL COUNTY — Edward St. Alban's Hyatt 1, dr 1825 ft. National Oil Co.'s Bell 1, standing 2175 ft, gbo. Partee et al's Hahl 1, abn 2400 ft in salt water.

HIDALGO COUNTY—Dale Smith's Daskan 1, standing 3235 ft. Queen City O. & G. Co.'s American Land & Irrigation Co. 2, 3 mi n Mercedes, dr 135 ft, gbo.

JIM HOGG COUNTY—Shaw's Jones 1, Sec 381, blk 12, Hebbronville, abnd at 2500 ft.

JIM WELLS COUNTY—Cushing Oil Co.'s Perez 1, 3 mi n Alice, dr 1275 ft, gbo and shale.

KINNEY COUNTY—Stephens et al's Clamp 1, standing 1030 ft, shale and lime.

LIVE OAK COUNTY — Harper et al's Nichols 1, e Calihan, standing 1170 ft.

MAVERICK COUNTY—Rycade's Chittam 2, Eagle Pass, fsh 5330 ft. Ryan Consolidated's India Land Co. 1, 24 mi se Eagle Pass, prep to pull cas.

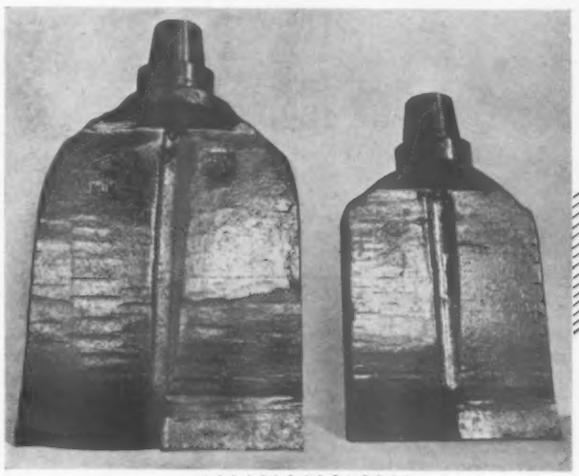
NUECES COUNTY—May et al's Gallagher 1, 12 mi w Corpus Christi, sd.

SAN PATRICIO COUNTY—Mission Drlg. Co.'s Cage 3, sw Odem, lcn. National Oil Co.'s McMullen sur 1, standing 2540 ft. Pardee Pet. Co.'s Bell 1, w Mathis, sd 2850 ft.

STARR COUNTY—The Texas Co.'s Guerra 1, dr 3306 ft, shale.

VAL VERDE COUNTY — East Del Rio's Weatherbee 1, standing 3335 ft. Magnolia's Whitehead 1, dr 6700 ft, shale. Thraves et al's Wilson 1, standing 905 ft. Valvert Oil Co.'s Bassett 1, lcn.

HEPPENSTALL DIAMOND "H" BIT AND JAR STEEL



For over 37 years this company has specialized in the production of this high grade cable tool steel, constantly maintaining the most rigid standard of quality with the result that Diamond "H" is recognized everywhere as a mark of unsurpassed quality on bit and jar steel.

For economy, dependability and superstrength specify Diamond "H" Bit and Jar Steel.

HEPPENSTALL FORGE AND KNIFE COMPANY
PITTSBURGH, PENNA.
FORT WORTH, TEXAS, OFFICE: 1415 F. & M. BANK BUILDING.

Progress

As industry forges forward new problems must be met and solved. The Wickwire organization has held this as the keynote of its activities. Consequently its products are abreast of the times in every particular—and are kept so by constant research in design, constant testing of materials, and constant supervision to the utmost detail of all manufacturing processes.

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39 East 42nd St., New York, N. Y.

Or

Branch Office:
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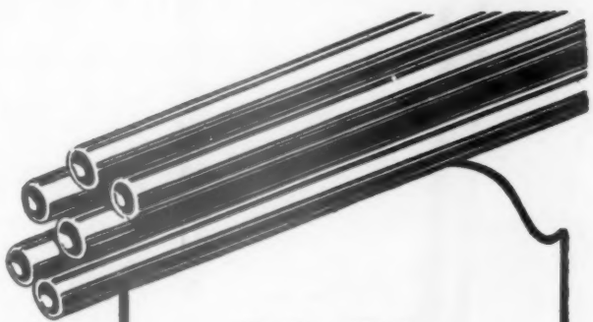
Tulsa, Okla.

Stocks carried by
Murray Tool & Supply Co.
Tulsa, Okla.

T. T. Word Supply Co.
Houston, Texas

A. F. Keck & Co.
Butler, Pa.

WICKWIRE SPENCER STEEL CO.
WICKWIRE SPENCER UNIFORM WIRE ROPE
tests better than A. P. I. specifications



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for bad water conditions—

Lapweld Steel
for good water conditions—

For long tube life.

The Tyler Tube & Pipe Co.
Washington, Pa.

Texas Stock—Harrisburg Pipe and Pipe Bending Co., Houston, Texas

Oklahoma Stock—Harrisburg Supply Co., Tulsa, Oklahoma.

No. 5 of a series on the

FLUID PACKED PUMP

FPP

Sturdy construction—exceptionally fine material and the anti-friction principle eliminate relining and recupping jobs, thereby reducing shut-downs and idle time.

The efficiency of the Fluid Packed Pump is not affected by the foreign substances that affect the efficiency of the ordinary pump.

Under usual conditions the Fluid Packed Pump will last indefinitely, and under adverse conditions it will outwear, by a wide margin, the ordinary tight fitted pump.

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West Texas Representative:

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ROBERT J. MILLER COMPANY
HOUSTON TEXAS

WEST TEXAS

Completions

CROCKETT COUNTY—
R. B. Coyle et al, Halff 1 ..... * 1382
WINKLER COUNTY—
Llano Oil Co. & Roxana, Scarborough 2 ..... 100 3304

ANDREWS COUNTY — Deep Rock Oil Co.'s Harris 1, elev 3173 ft, top salt 1705 ft, fsh tools with ¶1, 2941 ft.

BORDEN COUNTY—Dixon Creek Oil Co.'s Clayton-Jackson 1, elev 2606 ft, top salt 1250 ft, top lime 2940 ft, dr 3475 ft. Marland Prod. Co.'s McDavid 1, elev 2310 ft, top salt 870 ft, top lime 2410 ft, dr 3480 ft.

BREWSTER COUNTY—Cole-Cowden et al's Jackson-Harmon 1-A, spd and sd. Forrest Oil Co.'s Skinner 1, spd and sd. J. M. Hickey et al's Jackson-Harmon 1, sd 1035 ft. Van McPhail et al's McIntyre 1, sd 1725 ft. Reese & White's Kimball 1, sd 1790 ft. Wilcox & Anderson's Gage 1, elev 4320 ft, pull cas 2100 ft.

CONCHO COUNTY — Douglas Oil Co.'s Harrell 1, spd and sd.

CRANE COUNTY — C. C. Duffey et al's Cowden 1, rig. Gulf's Waddell 4, dr 230 ft. Humble O&R Co.'s University 1-C, sp.

CROCKETT COUNTY—Geo. H. Anderson & P. H. Williams' University 1, elev 2610 ft, top salt 990 ft, dr 1895 ft. The California Co.'s Powell 1 and 2, dks. W. W. Donnelly et al's Massie 1-A, sd 135 ft; Todd 1, dr 815 ft. Gulf's Powell 3-D, rig; Thompson 1-A, dr 115 ft. Grayburg Oil Co.'s Halff 8, dr 360 ft. Henshaw & McMan O&G Co.'s Owens 1, elev 2769 ft, top salt 1140 ft, top lime 2055 ft, dr 3605 ft. Humble O&R Co.'s Powell 4-B, rig. Renee Oil Co.'s University 1, dk. Republic Prod. Co.'s Powell 1-B, rig.. W. R. Simmons & Marland Prod. Co.'s University 1, elev 2522 ft, top salt 875 ft, sd 1130 ft. Taylor-Link Oil Co.'s Powell 2, dk; L. P. Peck 1, lcn. Tidal Oil Co.'s University 1, rig. Transcontinental Oil Co.'s Atwood 1, rig. Whonlick et al's Halff 1, sd 725 ft. World Oil Co.'s Schneeman 1-B, elev 2663 ft, re-set cas 2915 ft. F. P. Zoch et al's University 1, dr 250 ft.

CULBERSON COUNTY — Deep Rock Oil Co.'s Dettis 1, lcn. Dittman Drlg. Co.'s Miller 1, sd 1767 ft. J. M. Hickey et al's Finley 1, dr 1080 ft.

JEFF DAVIS COUNTY—Humble's Flores 1-A, elev 4239 ft, dr 4810 ft. Sam F. Means & G. M. Ball's J. Z. Means 1, fsh 2767 ft.

ECTOR COUNTY—The Texas Co. & Cosden & Co.'s Connell 6, top salt 950 ft, dr 2055 ft.

EL PASO COUNTY—Sillix et al's Malone 1, dr 235 ft.

FISHER COUNTY—Cranfill & Reynolds & Sun Oil Co.'s T. Willingham 1, rig. R. W. Rainey et al's Marberry 2, elev 1929 ft, top lime 2995 ft, cavey hole 3245 ft. Sinclair O&G Co.'s Steele 1, elev 1902 ft, ur 2735 ft.

GARZA COUNTY—Emerald Oil Co.'s J. M. Boren 3, elev 2363 ft, dr hfw 3665 ft. J. R. Latimer & A. F. Waggoner's W. L. Cross 1, lcn. Marland Prod. Co.'s Pippen 1, dr 2210 ft.

GLASSCOCK COUNTY—Marland & Texon's Settles 1, pumped 280 bbls, plugged back from 3504 to 1319 ft. Meriwether Oil Co.'s McDowell 2, elev 2522 ft, top salt 1000 ft, dr 1670 ft. Roxana's R. L. Boston 1, rig. World Oil Co.'s McDowell 1-B, rig.

TOM GREEN COUNTY—Cox et al's Llano Fee 1, sd 845 ft. Fitzgerald et al's Bennett 1, sd 1955 ft. P. H. McLaughlin & Ridge's Holder 1, spd and sd.

HOWARD COUNTY—Bristow & Merrick's Hooks 5, dr 1505 ft; Roberts 1, elev 2757 ft, dr 2110 ft. Cosden & Co.'s Roberts 1-A, lcn. W. W. Donnelly et al's Clay 1, spd and sd; Martin 1, cmt 5-in cas 3224 ft. F-H-E- Oil Co.'s Roberts 4-A, sd for shot in pay 1828-34 ft; Roberts 1-C, sd 1960 ft; Roberts 1-D, elev 2748 ft, top lime 2096 ft, re-set cas on pay 2950-52 ft; Roberts 3-D, dr 2495 ft; Roberts 2-E, dr 1550 ft. Godley O&G Co.'s Hooks 3, dr 1175 ft. Gulf Prod. Co.'s Clay 1, dk. Greene O&R Co.'s Clay 1, sd 985 ft. Henshaw et al's Settles 1, sd hfo 2519 ft. Magnolia Pet. Co.'s Harry Hyman 1, elev 2360 ft, dr 3055 ft; Roberts 4, elev 2704 ft, fsh 1035 ft; Roberts 5, sd hfo 2550 ft; Roberts 7, elev 2769 ft, dr 995 ft; Roberts 8, rig. Marland & Texon's Settles 2-A, sd 845 ft; Settles 3-A, dr hfw 1440 ft. Mays-Nixon et al's Flowers 1, elev 2497 ft, sd 2517 ft. Owen-Sloan Oil Co.'s Roberts 4, elev 2744 ft, sd 1990 ft. Pure Oil Co.'s Chalk 4, dr 975 ft. Sun Oil Co.'s Settles 2, ur 950 ft. Tate-Weekly & Tubbs' Roberts 4, elev 2739 ft, co after shot, td 1894 ft. Bert Weekly et al's Roberts 1, plugging back from 3505 ft.

HUDSPETH COUNTY — American Land Co.'s Lockhart-Roseborough 1, sd 180 ft. Western States Oil Co.'s Gardner-Moseley 1, dr 1970 ft; S. W. Moore 1, dr 1870 ft.

IRION COUNTY — B. A. Cline et al's Thompson 1, lcn. P. E. Hill et al's Horney 1, elev 2268 ft, plugging back from 1725 ft. Kimbrough & Tuel's Nutt 1, ur 540 ft. L. P. Powell et al's Horney 1, sd 320 ft. F. E. Webb et al's Nutt 1, elev 2354 ft, sd 900 ft. West et al's J. D. Suggs 1, spd and sd.

JONES COUNTY—Hucony Gas Co. et al's Tiner 1, dr 1425 ft. Phillips Pet. Co.'s Winters 6, ur 6-in cas 2962 ft. Roeser-Pendleton & Stebbins O&G Co.'s Higgs 2, machine, Teas & Wheeler's H. Sayles 1, dr 1065 ft.

KENT COUNTY — J. S. Cosden & Co.'s Bilby 1, lcn.

KING COUNTY—Humble O&R Co.'s Pitchfork 1, dr by cas 4035 ft.

LOVING COUNTY — Deleware Oil Co.'s G. B. Russell 2, co 810 ft.

LYNN COUNTY—Elpo Oil Co.'s Nevels 1, dr 2315 ft.

MARTIN COUNTY — Phillips Pet. Co.'s Slaughter 1, dr 430 ft.

MENARD COUNTY—Carpenter & Robbins' Kothman 2, sd 400 ft. Moody Corp.'s Allison 1, elev 2053 ft, sd 1500 ft. Panhandle Ref. Co.'s Eckardt 1, rig. Renfro et al's Davis 1, sd 385 ft. Sabiens & Bevans' Wilhelm 1, dr 165 ft. Sorrels et al's Wilhelm 1, spd and sd.

MIDLAND COUNTY — Gholson et al's Moreland 1, sd 3510 ft. O. H. Shoup et al's Parks 1, elev 2871 ft, ur 1200 ft.

MITCHELL COUNTY — Owen-Sloan Oil Co.'s G. M. Brown 1, dr 190 ft.

PECOS COUNTY—Amerada Pet. Corp.'s R. C. Dillon 1, lcn. Geo. H. Anderson et al's University 1, elev 2801 ft, top salt 1030 ft, top lime 1760 ft, sd 1880 ft. Alexander & Lyles' Sellman 1, lcn. Bateman & Price's Pecos River Bed 1, spd and sd. Benedum-Trees et al's Corder 1, co 525 ft. Buell-Hagan et al's Pryor 1, elev 2930 ft, top salt 1445 ft, sd 2508 ft. Diamond Pet. Co.'s Blackstone-Slaughter 1, dr 365 ft. M. Z. Dibble et al's Bonebrake 1, elev 2555 ft, sd 1170 ft. Ditto Oil Co.'s Montgomery 1, spd and sd. Bob Elmore et al's M. Holmes 2, elev 2150 ft, dr 1145 ft. Everett et al's Fields 1, sd 1015 ft. Furman Oil Co.s McNear 1, materials. McDonald & Stanley's Parsell 1, spd and sd. Mid-Kansas O&G Co.'s Pryor 1, elev 2790 ft, top salt 1465 ft, dr 2630 ft. Olean Pet. Co.'s Sherbino 1, elev 3027 ft, dr 1020 ft. Phillips Pet. Co.'s Heyman-Nutt 1, elev 2943 ft, sd 450 ft. Roxana & Kirby's University 1, elev 2620 ft, flow sulphur water 946 ft. Southern Crude Oil Purch. Co.'s Scharbauer 1, elev 2680 ft, set cas hfw 990 ft. B. J. Spikes et al's Brown 1, elev 2387 ft, sd 655 ft. Transcontinental Oil Co.'s University 1, elev 2543 ft, dr 2065 ft. Vacuum Oil Co.'s Elsinore 1, elev 3554 ft, dr 2675 ft. World Oil Co.'s M. Cerf 1, elev 2435 ft, set cas 3235 ft; Kloh 1, elev 2810 ft, set cas 1235 ft.

PRESIDIO COUNTY—Empire-Delmar-Phillips & C. E. Miller's Tootle 1, dk.

REAGAN COUNTY — The California Co.'s University 4, elev 2895 ft, top salt 1340 ft, top lime 3030 ft, dr 3050 ft. Mark Curtis & Moody Corp.'s Walters 1, spd and sd. Roxana Pet. Corp.'s University 1, fsh 400 ft. Skelly Oil Co. et al's University 2, elev 2918 ft, top salt 1340 ft, dr 2815 ft. Texon O&L Co.'s University-McBurnett 1, lcn: University 1-B, Group 1, rig burned, td 8220 ft.

REEVES COUNTY—Exploration Co.'s Kinney 1, dr 2190 ft. Grisham-Hunter & Cosden & Co.'s Conner-Rathje 1, elev 2667 ft, top salt 1037 ft, dr 3655 ft. McRobie et al's Bell 1, dr 305 ft. D. R. Thompson et al's Eddins 1, elev 2719 ft, sd 5499 ft.

RUNNELS COUNTY — Agnew & Fields' Russell 1, dr 865 ft. Gibson & Johnson et al's Serratt 1, ur 2840 ft; Rainwater 1, rig. Henry B. May et al's Schneider 1, elev 1666 ft, fsh 1775 ft. Marland Prod. Co.'s Russell 1, elev 1845 ft, ur 2190 ft. Marland & E. L. Smith Oil Co.'s Herring 1-A, set cas 1014 ft. Miles Oil Co.'s Lawhon 1, sd 2480 ft. R. B. Summers et al's Reese 1, dr 985 ft. Vacuum Oil Co. et

The above photo shows an Ever Ready Protector being run in at the Sinclair Oil and Gas Company's Caesar Jones No. 5, Seminole Pool, and party in picture is Mr. F. J. Wilson, farm boss. Other wells on this lease are equipped with Ever Ready Protectors.

To make sure of the *Complete* Tubing Protection which most large producing companies demand—

Run an EVER READY PROTECTOR on EVERY WELL—

The Ever Ready Protector functions from a positive action of the tubing itself—therefore it affords complete protection BEFORE the accident happens, and does not need to wait for an accident to make it function.

In crooked holes, in installing long strings of tubing, running in against gas pressure, and in fluid, the Ever Ready Protector has proved to be far superior to other types, because of its principles of design and operation. Eliminates anchor below perforated pipe, saves wear on casing, prevents buckling of tubing, and extra tubing jobs due to unscrewed collars on tubing. It is the *only adjustable* protector on the market.

EVER READY PROTECTOR

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Los Angeles, California.

LOUISIANA OFFICE:
737 Rutherford St.,
Shreveport, La.

TEXAS OFFICES:
924 Post-Dispatch Bldg.,
Houston, Texas

1408 Fort Worth Nat'l
Bank Bldg.,
Fort Worth, Texas.

al's Flannagan 1, dr 250 ft, co making ¶2 and trace oil 475-85 ft, td 3501 ft.

SCHLEICHER COUNTY — Long Bros. et al's Koonsman 1, rig.

STERLING COUNTY—Manhattan Oil Co. & Hucony Gas Co.'s Elwood 1, rig.

STONEWALL COUNTY — Henshaw Oil Corp et al's Moore 1, co 1270 ft.

TERRELL COUNTY—Champlin Ref. Co.'s Carter 1, elev 2884 ft, dr 2525 ft. Deep Rock Oil Co.'s Noelke 1, elev 2405 ft, top lime 1130 ft, dr 2455 ft. Humble O&R Co.'s University 1, elev 2284 ft, dr 3240 ft. Milham Corp.'s Bassett 1, elev 2270 ft, co 2409 ft.

UPTON COUNTY — Penn-Atlantic et al's Elkins 1, elev 2741 ft, top salt 1590 ft, dr 2225 ft. Curtis-Hults et al's Giddings 2, co 975 ft.

WARD COUNTY — E. H. Devore et al's Black 1, spd and sd. Estex Oil Co.'s Estes 1, dr 685 ft. Denver Prod. & Ref. Co.'s Cherokee Fee 1, dr 310 ft. Rector Oil Co.'s State Fee 1, spd and sd. Selby O&G Co. et al's Dooley-Jones 1, elev 2661 ft, dr 2220 ft.

WINKLER COUNTY — Amerada Pet. Corp.'s Walton 1, elev 2833 ft, making gas, fsh 2502 ft. V. T. Bolin & Co. et al's Brown 1, elev 2847 ft, top salt 1302 ft, dr 2650 ft. Danciger O&R Co. et al's Sealy 1, top salt 1085 ft, dr 2770 ft. Gibson-Johnson et al's Lum Daugherty 1, elev 2883 ft, top salt 1980 ft, top lime 2687 ft, mudded off gas, cored show oil and gas 3159-64 ft, td 3167 ft. Sid Richardson et al's Stockton Cattle Co. 1, dk. Southern Crude & Westbrook's Hutchings 1-T-90, sidetracking drill stem, td 2706 ft.

SOUTH LOUISIANA

Completions

ASCENSION PARISH—		
John J. Finnorn, Pertius 1, 1 mi ne Sorrento	*	2475
CAMERON PARISH—		
La. Land & Explo. Co., Calcasieu Lake B-1, ½ mi ne Kelso Bayou dome	*	3265
Roxana Pet. Corp., Watkins Est. 1, Black Bayou dist.	*	1700
Yount-Lee Oil Co., State Land 8, Kelso Bayou dome	500	3940

ASCENSION PARISH—Gulf's United Lands Co. 7, Sorrento Dome, ru. John J. Finnorn's Pertuis 1, Sorrento, abn 2475 ft. Triumph Oil Corp.'s J. D. Lacey et al 1, 1¼ mi se Sorrento, lcn. Acme Prod. Co.'s DeHaas-Eby 1, Sorrento, dk.

CALCASIEU PARISH—Union Sulphur Co.'s Fee 725, Sulphur Dome, dr 435 ft, gravel; Fee 726, Sulphur Dome, ru; Fee 727, Sulphur Dome, dr 1725 ft, rock.

CAMERON PARISH—Pure Oil Co.'s Sweet Lake 2, Sweet Lake, waiting on rig; Sweet Lake 3, Sweet Lake, trying to pull screen; Sweet Lake 4, Sweet Lake, trying to pull screen; Sweet Lake 5, Sweet Lake, pulled screen to deepen. La. Land & Explo. Co.'s Calcasiou Lake B-2, lcn. Calcasieu Oil Co., Magnolia & Union Sulphur Co.'s Caldwell 2, Kelso Bayou Dome, will put to pumping; Caldwell 3, pulling screen to deepen; Doiron 2, ru; Watkins 4, ru; Watkins 5, ru. Noble et al's Ellender 1, Hackberry, standing 4490 ft. Roxana's Watkins Est. 1, Black Bayou dist., abn in salt at 1700 ft. Yount-Lee Oil Co.'s State Land 7, Hackberry, dr 4465 ft, rock; State Land 8, Hackberry, completed for 500 bbls initial pipe line oil on ¾-in choke; State Land 9, Hackberry, ru; State Land 11, Hackberry, ru; State Land 12, lcn; State Land 13, lcn.

IBERIA PARISH—La. Land & Explo. Co.'s Vermilion Bay A-2, set cas at 700 ft. Gulf's Loreauville, ru. Jefferson O. & Dev. Co.'s State Z-5, Loreauville, lcn. Broussard et al 2, Jefferson Island 2, dr 5360 ft, shale and sand.

IBERVILLE PARISH—Union Sulphur Co.'s Schwing 2, Bayou des Glaise dome, dr 2730 ft, sand.

JEFF DAVIS PARISH—Scroggins et al's Purveiance 1, Welsh, dr 1650 ft.

LA FOURCHE PARISH — Gulf's Stark et al, 3, Thibodaux, dr 1140 ft.

ST. MARTIN'S PARISH—Rycade's Fee 3, Bayou Boullion, dr 2800 ft.

TEXAS

GULF COAST

Completions

BRAZORIA COUNTY—		
Roxana Pet. Corp., Allen 4	218	5109
CHAMBERS COUNTY—		
Humphreys Corp., Barber A-1, Barbers Hill	*	115(
Mt. Bellview Oil Co., Williams 1, Barbers Hill	*	4555
FORT BEND COUNTY—		
Gulf, Trone 7, Long Point	*	3120
Texas Gulf Sulphur-Sun Oil Co., J. R. Farmer 7, Boling	*	1700
HARRIS COUNTY—		
H. R. Cullen, Brock 1, ¾ mi s Almeda	*	350(
JEFFERSON COUNTY—		
Gulf, Bordages 5, Fannette	*	200(
LIBERTY COUNTY—		
Electric Oil Co. (R. L. Young), Wood 1, S. Liberty	*	1290

AUSTIN COUNTY—Humble's Wilson 1, Raccoon Bend, dr 4135 ft, shale; Grawunder A-1, Raccoon Bend, dr 3487 ft, sandy shale and shell. L. H. Weadock's Ward 1, reaming 1990 ft. Alexander & Lyles' Goebel 1, dr 3725 ft, sand and shale.

BRAZORIA COUNTY — Roxana's Allen Bernard 1, Allen Dome, pumping 12 bbls; Allen 4, Allen Dome producing 218 bbls, flowing through ¼-inch choke; Randon 1, Allen Dome, fsh for dr pipe, td 4942 ft. Gulf's Perry 3, Stratton Ridge, fsh for dr stem, td 5825 ft. Bowman et al's Seaburn 1, Stratton Ridge, dr 3715 ft, rock. Stanfield & Myers' McNeil 1, Hinckle Ferry, sd 1420 ft. Rucks et al's Muldoon 1, Slop Bowl, sd 1130 ft, water, sand. Brazo Oil Co.'s Wisdom 3, Damon Mound, dr 1700 ft, sand. McNellie Oil Co.'s Bartlett 1, West Columbia, dr.

CHAMBERS COUNTY — Pure Oil Co.'s Lost River 1, Lost Lake Dome, bailing 3 bbls oil with 10 bbls wash water, to 3670 ft; Old River 1, Lost Lake Dome, ru; Trinity River 1, Lost Lake Dome, ru; Little Lost Lake 1, Lost Lake Dome, dredging canal; Lost River Lake 1, dk; Cut-Off Bayou 1, Lost Lake Dome, dk. R. L. Bartlett's Fisher 1, Barbers Hill, pulling screen and liner, td 2160 ft.

COLORADO COUNTY — Rich Oil Corp.'s Von Rosenberg 1, 2½ mi ne Columbus, dr 2585 ft, sand and shale. Deal et al's Tanner 2, 3 mi s Glidden, sd 1025 ft.

FORT BEND COUNTY—Sun Oil Co.'s E. C. Farmer 1, Boling, dr 1925 ft, cap rock; E.

MALONEYS Are Gas-Tight Throughout

MALONEYS possess *exclusive* advantages that contribute to tightness: Our patented "crimp" which gives snug fit of parts where sheets overlap; Our specially developed packing and Gaso Cement; Our 90,000-lb.-tensile-strength bolts. Other valuable features are: construction of rust-resisting Keystone Copper Steel, reinforcement of seams, large cleaning-out plates.

Howell Aluminum "3-in-1" Vacuum Pressure Valve and Thief-Hatch —The BEST and LATEST Deck Equipment—POSITIVE Safety.

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MADE OF KEYSTONE COPPER STEEL

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Distributors at All Principal Petroleum Points

Sizes: 12 to 10,000 Barrels

Packed in Steel-Bound Crates for Export

MADE OF KEYSTONE COPPER STEEL

MALONEY

There is Over 3,000,000 Feet of

JONES A. P. I. SPECIFICATION SUCKER RODS

Now In Use

"High Manganese" RODS

Made in Both Box and Pin and Double-Pin Types

S. M. JONES COMPANY, Toledo, Ohio

TULSA OFFICE: 422-423 McBIRNEY BLDG.

The SPIRAL BOTTOM WATER PLUG

Prevents-blow-outs

Insures a shut-off

Note how the spirals of boiler-plate steel bite into the walls of the well taking an unbreakable hold!

Note how the oakum packing is uniformly compressed between the steel spirals when Plug is tamped, forming a non-porous, gas and water tight mass.

Operators who have been troubled by having bottom water plugs blow out or fail to effect a shut-off can be sure that the GUIBERSON Spiral Plug will "stay put" and make a tight seal that will outlast the well. Furnished in Standard Type, in Wash-Down Type which permits flushing of hole before setting, and in collapsible Core Type for setting close against bottom. We also make Spiral Tubing and Casing Packers. Fully Patented.

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GUIBERSON

BETTER BE SAFE THAN SORRY

C. Farmer 2, Boling, lcn; Kaspereck 3, Boling, dr 2075 ft; H. R. Farmer 6, Boling, dk. Gulf's Trone 7, Long Point, abn 3120 ft, cap rock; J. M. Moore 15, Moore's Field, dr 4275 ft. Humble's Brazos Farm 1, Sugarland dome, dr 1498 ft, gbo; Sugarland Industries 2, Sugarland dome, lcn, 450 ft out of se c of Sugarland Industries lease. Vacuum Oil Co.'s Levy 1, Thompson, dr 860 ft, gbo.

HARRIS COUNTY—Juanita Oil Co.'s Kitsman 1, 3 mi n Cypress, dr 2010 ft, shale. Hunt et al's Lobit 1, 4 mi n Goose Creek, dr 1888 ft, gbo. Humble-Marland's Warren 4, Hockley, dr 92 ft, sand. Cedar Bayou Oil Co.s Johnston 1, 7 mi n Goose Creek, lcn.

JEFFERSON COUNTY — Deep Test Oil Co.'s McFaddin 1, 4 mi ne Spindle Top, sd 2175 ft. Gulf's Bordages 5, Fannett, abn 2000 ft, gyp. Southern Spindle Top O. & Dev. Co.'s Young 1, 1 mi w Nederland, sd 3425 ft. Port Arthur O. & Dev. Co.'s West 4, Westbury, dr 3988 ft, gbo and shale. A. M. Deems et al's Mashman 1, 1 mi s Voth, dr 725 ft, water, sand. Traders Oil Co.'s Cissell 1, Spindle Top, dr 4650 ft, sand and shale. The Texas Co.'s Gladys City 1, Spindle Top, dr 4585 ft, sand and shale. Beaumont Oil Co.'s Tyrrell 1, 2 mi w Brooks, dk.

LIBERTY COUNTY—Barlow et al's Minchcliff 1, 2½ mi ne Cleveland, sd 2215 ft. The Texas Co.'s Staiti 9, S. Liberty, setting cas at 3357 ft; Staiti 10, S. Liberty, dr 2381 ft, gbo and lime; Pickett 1, nw extension S. Liberty, sdtrk 3295 ft; Green 4, nw extension S. Liberty, dr 1550 ft, gbo. Sun Oil Co.'s Richardson 1, nw extension S. Liberty, dr 1275 ft, shale; Cunningham 1, nw extension S. Liberty, dk; Singleton 1, nw extension S. Liberty, cas set and cmt at 1820 ft. Electric Oil Co.'s (R. L. Young's) Wood 1, nw extension S. Liberty, abn 1290 ft, cap rock. Big Dome Interests' Finley 1, 2½ mi nw Hardin, dr 1920 ft, shale.

MATAGORDA COUNTY — Matagorda County Dev. Co.'s Hawkins 1, Bay City, 1985 ft, sd. Gulf's Sanborn 6, Hawkinsville, dr salt 790 ft; Vinyard 1, Hawkinsville, dr 3635 ft.

Pipe Line Tax Ruling

According to a decision in the Circuit Court of Appeals for the Fifth Circuit, the Dixie Oil Company failed to recover taxes assessed and collected by the United States Government on the transportation of oil owned by the company in a pipe line which it owned.

The Dixie Oil Company owned and operated a gas and oil lease covering approximately 700 acres on which there was a number of producing oil and gas wells, the eastern boundary of the lease being 8000 feet from the nearest railroad, the Texas and Pacific. The company owned a pipe connecting the wells on its lease with a loading rack on the railroad, the loading rack also being owned by the company. The oil produced was pumped from the wells into a battery of settling tanks located on the lease, and from those tanks was pumped to the loading racks and there loaded into tank cars. The pipe was never used as a common carrier pipe line.

In spite of these facts, however, the court held that the oil company was not exempt from paying the tax, which was held to apply to transportation of all oil by pipe line regardless of ownership of either pipe line or commodity, according to the provisions of the Revenue Act of 1918 (sections 500e and 501d, 40 Stat. 1102, 1103).

COMPLETIONS

(Continued from page 72)

Company, Well and Location	Initial Production Bbls.	Depth
COOKE COUNTY—		
B. J. Chronic et al, Kelley 1	*	1617
Oil Operators Trust, Inc., Haigler 1	*	2502
H. H. Simpson et al, Houston 1	†	2965
ELECTRA—		
Wayne Hammon et al, McCarty 2-C	*	725
McCarty 3-C	4	244
McCarty 6-C	30	1356
McCarty 7-C	90	1371
T. F. Hunter et al, Waggoner Bros. 32	4	650
Ryan Consolidated Pet. Corp., Nance 92	250	1371
Nance 93	40	1372
The Texas Co., Waggoner 348	*	2251
GRAYSON COUNTY—		
Richardson et al, Taylor 1	*	2545
K-M-A & IOWA PARK—		
Bullington-Lee et al, Fassett 1	*	1859
Coleman & Coppock, K. & K. 8	90	861
Holbrook & Wood, K. & K. 18	80	866
K. & K. 19	20	870
Merrick Drlg. Co., J. F. Boyd 1	*	1850
W. B. Omohundro et al, Chilson 9	*	830
Chilson 2-A	*	831
Petroleum Prod. Co., M. A. Love 9-B	*	516
M. A. Love 11-B	*	520
M. A. Love 12-B	15	496
M. A. Love 13-B	4	192
Shappell Oil Co., G. W. Lewis 1	*	1780
The Texas Co., Sue Mitchell 1	*	1955
Van Wormer et al, J. A. Fisher 9	10	858
KNOX COUNTY—		
Deep Rock Oil Co., Coffman 1	*	4516
MONTAGUE COUNTY—		
Roy I. Carter et al, Bouldin 5	20	819
Spencer & Rhodes, Bouldin 9	20	833
Bouldin 10	15	830
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner 4-L	110	2305
Waggoner 5-M	170	2350
Waggoner 1-R	*	1185
Murchison Oil Co. et al, Waggoner 1-G	*	1610
Prairie O&G Co., Waggoner 8-A	60	2410
YOUNG COUNTY—		
Allen & McKee, Hickerson 1	*	605
Boller et al, McKinley 1	*	602
Bullington-Lee & Pendleton, Boone 2	25	494
Chancellor & Anderson, Grubbs 1	*	555
Chandler et al, Ferguson 1	*	540
Clarida et al, Fee 1	*	688
Clark et al, Vance 1	*	603
Continental Oil Co., Weichman 1	*	1202
Cooper & Barrett, Hutchings 1	*	1014
Cunningham et al, Dunman 1	*	538
Kleiner et al, Langston 6	25	587
Martin et al, Smith 1	*	625
Parker et al, Johnson 2	8	581
Riggs et al, McKinley 6	400	596
Scott et al, Kirby 1	*	602
Shappel Oil Co., Cox 1	*	818
Shaw-Riggs et al, McKinley 4	4	604
Stafford et al, Langston 2	12	594
CENTRAL WEST TEXAS		
BROWN COUNTY—		
Amerada Pet. Corp., Beck 1	*	1395
Cranfill-Reynolds, Kellar 1-A	100	1207
Danciger & Cohen, Haynes 7	*	1221
Henshaw Oil Corp., Bush 11	140	1100
Bush 12	40	1105
Humble O&R Co., Kilgore 5-A	15	1121
Kilgore 10-B	50	1184
Kone Prod. Co., Hickman 1-C	*	1286
Peckham et al, Bush 4	20	1131
Newton 1	5	1145
Phillips Pet. Co., Hickman 12	200	1263
Shuler & Davies, Boysen 2	*	1250
Van Bebber et al, Mullin 1	*	1270
Van Bebber & Lehman, Evans 6	*	1780
Winkler et al, Black 1	*	1265
COLEMAN COUNTY—		
Chestnut-Smith & Eastland Oil Co., Morris 3	*	2115
Morris 4	*	3318
Continental Oil Co. et al, Overall 1-F	720	1505
Humphreys Bros., Inc., Rutherford 1	*	1310
Mid-Sun Oil Co., Guthrie 2	*	1034
Taylor et al, Henderson 1	*	2067
Taylor-Link Oil Co., Miller 1	*	2502
EASTLAND COUNTY—		
Amerada Pet. Corp., Roberts 1	*	1045
Barkley et al, Duffer 4	*	3006
Forster et al, Spencer 1	*	1346
Goodwin et al, Parker 2	15	1460
Mexana Oil Co., Bowers 1	*	1353
Parsons et al, Scott 2	¶8	3157
PALO PINTO COUNTY—		
Bullington-Lee et al, Wester 1	¶6	1336
SHACKELFORD COUNTY—		
Petroleum Prod. Co., Matthews 3	100	1148
Roeser-Pendleton, Inc., Cook 1-A (Sec. 53)	*	2600
Tannehill-Kiser et al, Matthews 2 (Sec. 27)	20	1162
Matthews 1 (Sec. 33)	200	1157
Matthews 2 (Sec. 33)	30	1165
E. M. Treat O&G Co., Matthews 2	10	1170
Matthews 3	240	1168
STEPHENS COUNTY—		
Phillips Pet. Co., Burke 1 ¶2½ and	5	2066
EAST CENTRAL TEXAS		
LIMESTONE COUNTY—		
Pure Oil Co., Unfried 1	*	2888

Appropriation Asked for Bartlesville Station

Washington.—A bill by Representative Howard, Democrat, of Tulsa, Oklahoma, would authorize an appropriation of $25,000 for the maintenance of the United States Bureau of Mines Petroleum Experiment Station at Bartlesville, Oklahoma, in addition to the amount already appropriated by Congress for the Bureau of Mines. The bill has been referred to the Committee on Mines and Mining.

Book Review

The American Association of Petroleum Geologists, Tulsa, announces publication of a new book under the title of "Theory of Continental Drift." The work is a symposium on the origin and movement of land masses both inter-continental and intra-continental, as proposed by Alfred Wegener.

The introduction stated as "The Problem of Continental Drift," is by W. A. J. M. Van Waterschoot Van Der Gracht, and then follows discussions by a number of other noted geologists among whom are Dr. Charles Schuchert, Alfred Wegener and David White.

Illustrations are included with each discussion.

Contents are as follows: Introduction; Problem of Major Chains of the Earth Not Explainable by Contraction Theory; Constitution of the Interior of the Earth, Notably the Outer Shell; Physical State of Matter and Some of its Properties Defined; Application of Properties of Matter to the Interior of the Earth; The Various Drift Theories; Some of the Principal Geological Facts in Favor of Continental Drift; and Both Inter- and Intra-Continental Drift Necessary Consequences of Joly's Hypothesis.

Copies of the book may be secured from The American Association of Petroleum Geologists, Box 1852, Tulsa, for $3.50.

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STANDS SUPREME

Every step in the production of Asco Steel is watched closely. From the selection of the raw materials to the finished product, the first thought always is to produce a steel that will give the best results to the makers of Oil Well Tools. Can we help you to produce better tools?

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541 McCormick Bldg., Chicago, Ill.

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NEWPORT KENTUCKY

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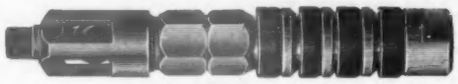

The Protex Valve is steadily widening its circle of friends. Loss of Cup or Cup Rings impossible because lock-nut holds the cups in correct position and at required tension. Ask your dealer for particulars.

The Chas. N. Hough Manufacturing Co.
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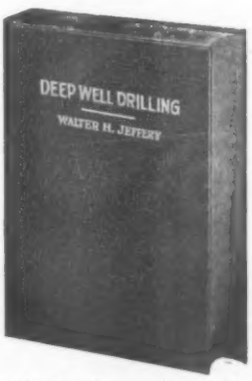
Products That Cut Down Your Underground Overhead

Deep Well Drilling
Second Revised Edition

By Walter H. Jeffery



An up-to-date handbook on well drilling by the methods most generally used: cable, or standard, rotary, combination cable and rotary, and diamond drilling. Includes chapters on Geology, Use of Mud Fluid, Casing Methods, Use of Packers, Cementing, Electrical Drilling and Pumping, Shooting, Completing the Well by Modern Methods, Costs of Drilling, Strength of Materials, Etc. A valuable book for the technical school, for the student and for the driller and operator.

648 pages, 314 illustrations and diagrams. Postpaid, $6.00

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712 MARINE BANK BLDG.,
Houston, Texas

New Catalog

"100 and 1 Ways to Save Money with Portable Compressors" is the title of a catalog published by Ingersoll-Rand Company, 11 Broadway, New York. As the title indicates, this two-color book contains a great variety of comparative cost data as well as 300 interesting photographs. It illustrates every known application of air tools in industry.

Copies may be obtained by request to the company.

Catalog Announcement

E. B. Wiggins Oil Tool Company, Inc., 3424 E. Ninth Street, Los Angeles, announces publication of a catalog describing the various Wiggins tools for use in oil fields. These include Wiggins underreamers, Wiggins safety hook hobbles, Wiggins antifriction tool joint subs and tool joints, Wiggins rubber grip hose connections, and Wiggins roller bearing disc bits.

Copies of the catalog will be mailed on request to the company.

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WEST TEXAS

County Maps
Combination Maps

Descriptions and prices on application.

HEYDRICK MAPPING COMPANY
Wichita Falls, Texas.

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15 Years in Texas
Reference: Mercantile Agencies

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5 dining-rooms
RATES—$2.50 up
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In Cleveland, you will enjoy your stay at the Auditorium. In the heart of the city, overlooking the Convention Hall and beautiful Lake Erie. 300 Comfortable Rooms $2.50, $3.50 and $4.00.

W. H. BYRON, *Manager*

Cleveland, Ohio

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What Happens?

—When Your Machinery Starts and Stops

Much of the wear and tear on machinery comes from starting and stopping. For then the fluid film of lubrication is broken, ***and unless you are using the right lubricant,*** friction takes a heavy toll.

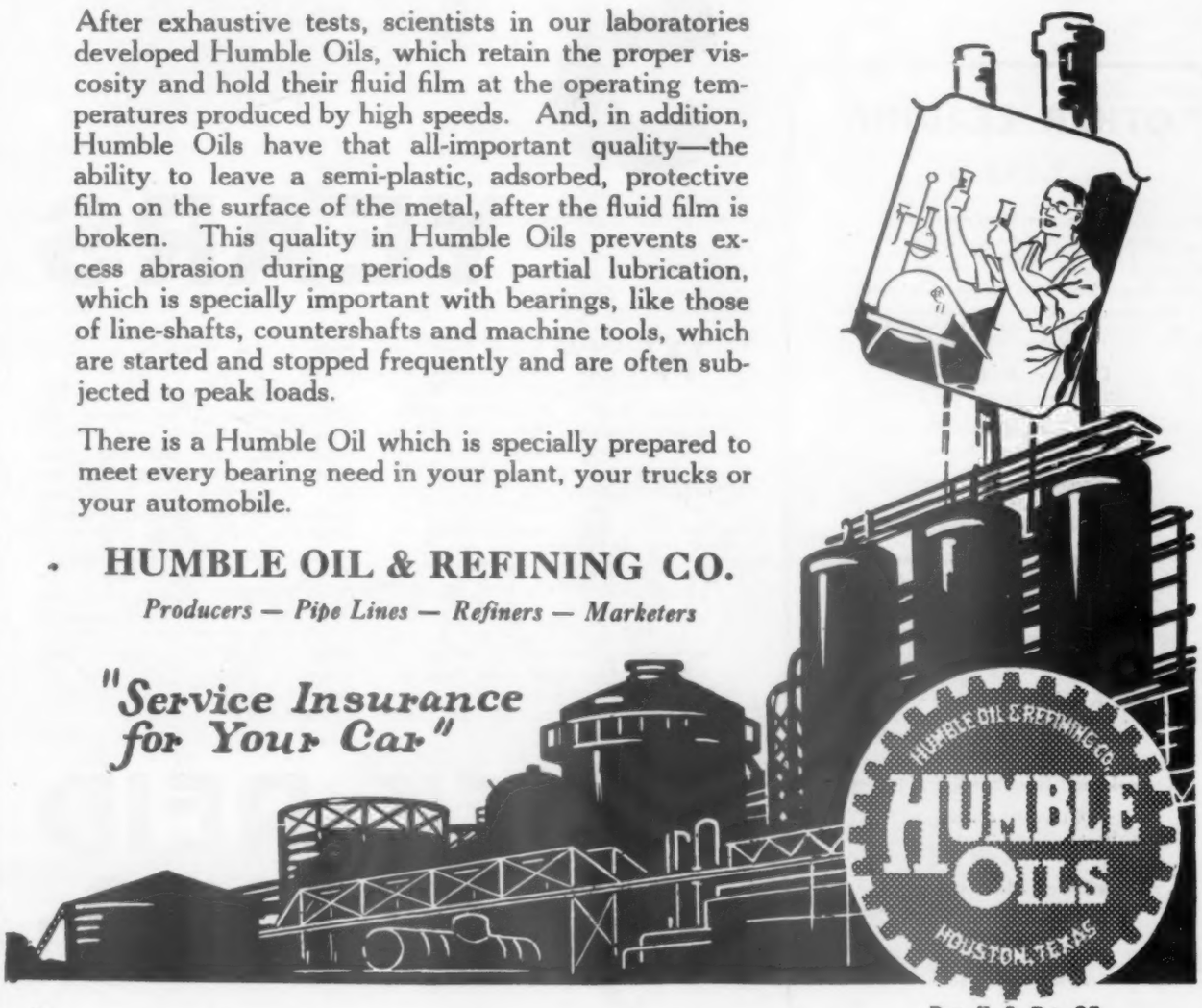
As long as the fluid film is intact, the quality of the lubricant is not so important—but when the fluid film breaks, as it does every time you start and stop a machine—the quality of the lubricant supplied to the bearings is of prime importance, if friction is to be kept from doing serious damage.

After exhaustive tests, scientists in our laboratories developed Humble Oils, which retain the proper viscosity and hold their fluid film at the operating temperatures produced by high speeds. And, in addition, Humble Oils have that all-important quality—the ability to leave a semi-plastic, adsorbed, protective film on the surface of the metal, after the fluid film is broken. This quality in Humble Oils prevents excess abrasion during periods of partial lubrication, which is specially important with bearings, like those of line-shafts, countershafts and machine tools, which are started and stopped frequently and are often subjected to peak loads.

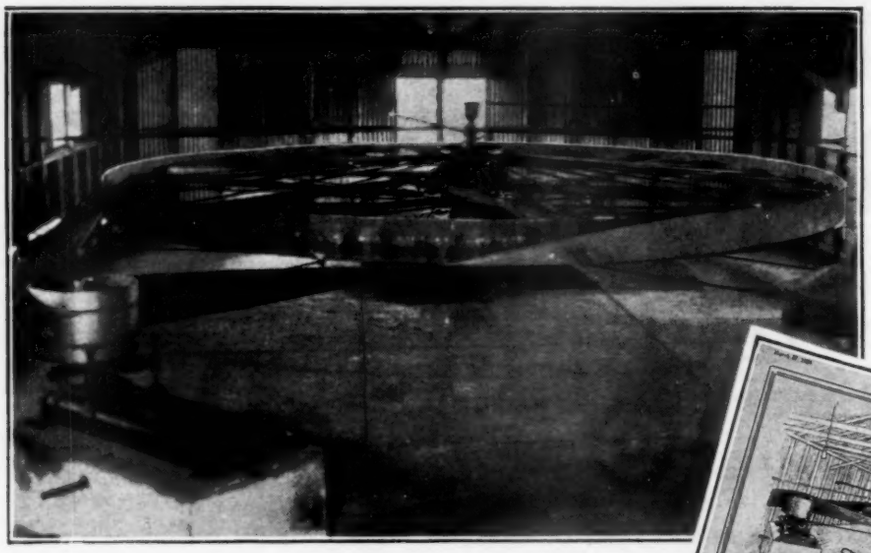
There is a Humble Oil which is specially prepared to meet every bearing need in your plant, your trucks or your automobile.

HUMBLE OIL & REFINING CO.

Producers — Pipe Lines — Refiners — Marketers



Reg. U. S. Pat. Off.



Left: Recent photograph of first Reid 24 ft. Band Wheel Power ever made.

Below: An announcement in 1924, nine months after installation.

AFTER 5 YEARS

OTHER LEADING LINES

Axelson Machine Co.
Sucker Rods, Pull Rods, Plunger Working Barrels (Pumps) etc.

Beaumont Iron Works Company
Dreadnaught Rotary Equipment, Water-Cooled Drawworks, Pumping Hoists, Traveling Blocks, etc.

Donovan Boiler Works
Oil Country Boilers and Tanks.

Frick-Reid Service Belting
Rubber Covered and Friction Surface.

National Transit Pump and Machine Co.
Power and Steam Pumps.

Joseph Reid Gas Engine Company
Gas and Oil Engines, two and four-cycle, Band Wheel and Direct Drive Pumping Powers.

J. P. Ratigan
Grips, Clamps, Beam Hangers

Whitlock Cordage Co.
Manila Cordage, including Frick-Reid Manila Bull Ropes—same quality for ten years.

Lapweld and Seamless Tubular Goods

Walworth Company
Valves, Fittings and Tools for Steam, Water, Gas, Oil and Air.

Rossendale-Reddaway Company
"Camel Hair" Beltings, Belt Clamps.

Engineering Crews
for the installation of Pumping Powers and related equipment.

WHEN the Joseph Reid Gas Engine Company made the first 24-foot Band Wheel Power, with a 24-inch eccentric, Superintendent Elder of the Theta Oil Company bought it for his Company. That was in June, 1923, and for months the T. F. Schneider Lease, Section 19-23-13, Gridley Field, was a sort of Mecca for the Oil Men of Kansas and Oklahoma. To all comers, Mr. Elder simply said: "She's workin' fine!"

In March, 1924, we ran the advertisement reproduced above, in which we pointed out that the wealth of experience and unimpeachable judgment of Mr. Elder gave to his words a prophetic strain.

And now, after five years, Mr. Elder states: "This power has been in continuous service since installation. For the first three years it ran twenty-four hours per day. Since that time it has run twelve hours per day. It has pulled twelve wells all the time, at a depth of about 1800 ft. with 2" tubing and ¾" Sucker Rods. The Power has given me excellent service, with no expense whatsoever. It affords me pleasure to recommend the Reid 24 ft. Band Wheel Power to producers who require a power for heavy duty and economical service"

FRICK-REID SUPPLY CO.

TULSA, OKLA. **PITTSBURGH, PA.**

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

New 100 Horsepower Compressor

PATTIN BROTHERS COMPANY

Pattin Brothers Company, Marietta, Ohio, have perfected and are now marketing a new 100 horsepower direct driven compressor.

This compressor was designed especially for building up rock pressure on old wells, and is recommended for any compressor work where heavy continuous service is required.

The outfit is a four-cycle, single acting, center crank type, with two fly wheels, fully enclosed, and fitted with the new auxiliary exhaust sleeve valve.

This valve, it is claimed, minimizes valve trouble. Since practically all fire is taken out of the cylinder through the center of the sleeve valve and does not come in contact with the finished surface of the main valves, wear is reduced to the minimum also. After exhaust takes place, the valve closes.

Each cylinder is independent of the other. The pistons or valves can be removed without changing any connections or affecting the alignment of the compressor.

The compressor is equipped with a high-speed governor, is gear-driven, enclosed, has renewable phosphor bronze main bearings with wedge adjustment, and has an enclosed combination splash and force feed lubrication system, with an automatic air starter.

A special feature built into the unit enables it to operate on very lean air-gas, it is said.

Meister valves are used in the compressor. These valves are made of vanadium steel. Seats are made separate from the cylinder and are accessible for cleaning or repairing.

More information is available from the company by request.

Marley Cooling Tower

Marley Cooling Tower

POWER PLANT EQUIPMENT COMPANY

The Power Plant Equipment Company, Coca Cola Building, Kansas City, Missouri, is marketing the "Marley" Spray Cooling Tower, a tower adapted to oil engine and similar installations where small quantities of water must be cooled continuously.

The tower is said to combine the desirable features found in both spray pond and standard cooling tower designs. Its small size conserves space.

The tower occupies an area eight by eight feet and it is only nine feet tall. The main support frame is of cast iron, slotted to hold louvre boards.

The cooling cone consists of a standard, open type "Marley" nozzle within an open cylinder. This type of cylinder is mounted upon a nozzle and is concentric with it. Four cones assembled upon a "Marley" special group fitting, constitute the spray equipment within the tower. When the nozzle operates, the upward flow of water induces an inward and upward flow of air through the cylinder.

Further information can be secured by writing the company.

New Hammer Bit

UNITED STATES HEAT TREATING COMPANY

A new bit known as the Hammer Rock Bit is being manufactured and marketed by the United States Heat-Treating Company, Inc., 319 Dakota Street, San Antonio, Texas.

This bit, perfected by Harry Pennington, has been tested out extensively and is showing up unusually well.

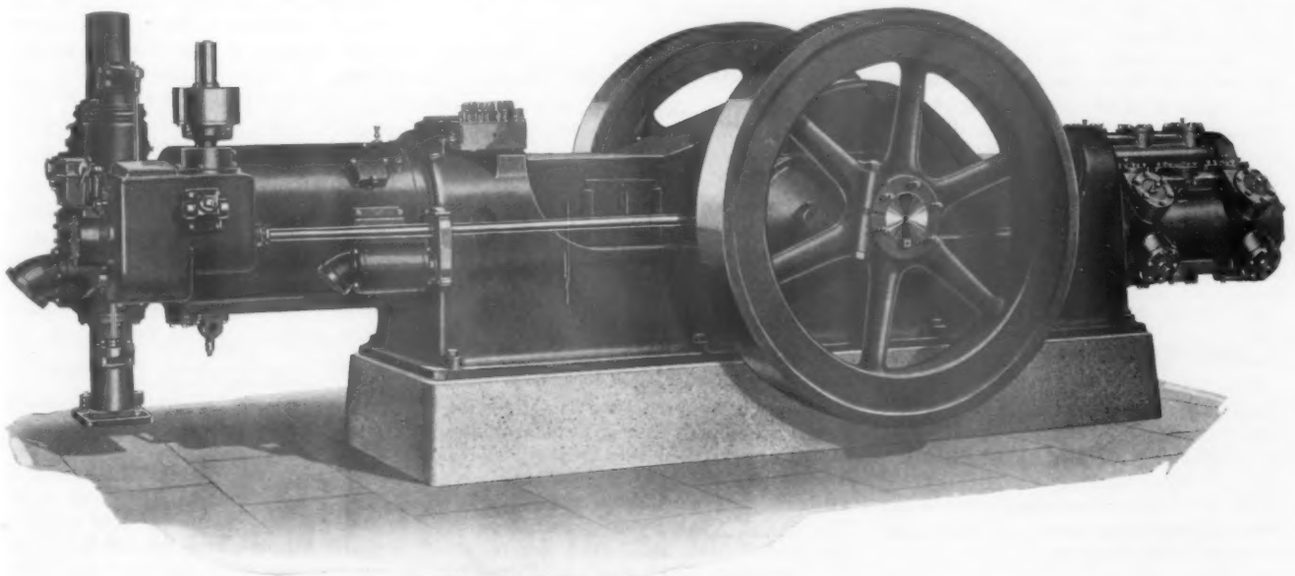
The hammer stem inside of the bit barrel, just above the bit chuck, is made like a cable tool drill stem. Water corculation lifts the hammer and shoots it down, striking a blow on top of the chuck and bit, as it is rotated and the cuttings are being flushed out.

Shape of the bit edges is such, it is said, that the sharp edges dislodge the rock, rotation sweeps the fragments under the side crushers and the next blow crushes them, ready for flushing out.

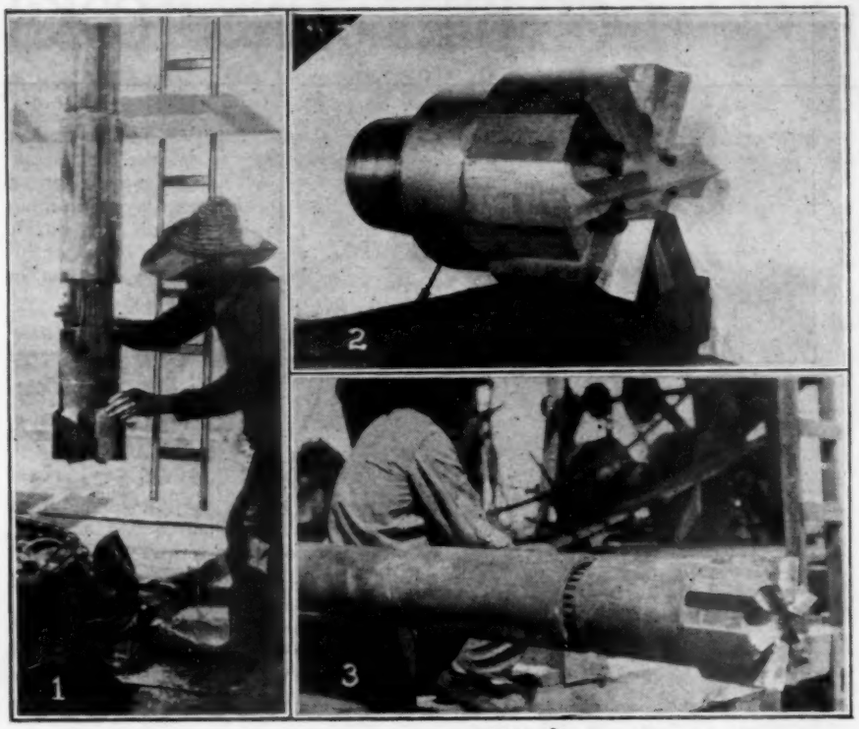
The bit may be washed to bottom without the hammer striking, and when the cutting edges rest on bottom, the hammer takes up its work, beginning striking, and continuing as long as it rests on bottom. When the bit is lifted six inches off bottom, the hammer ceases to strike, and circulation passes on through.

The chuck has a slip joint which eliminates shock to the pipe.

The bit parts, chuck and tool joints, are



Pattin 100-Horsepower Direct-Driven Compressor



No. 1 and 2 shows construction of the Pennington Bit, and No. 3 shows it after six hours run on hard rock; note sharpness of the edges.

made of chrome nickel steel, roughed-out, hollow-bored and heat-treated. The bit itself is made of 55 carbon chrome nickel steel, heat-treated. It is claimed that the edges are hardened to almost glass hardness.

One of the bits, a 9⅞-inch, is being run in a well of Estes-Moore-King, near Kyle, Hays County. Details of the bit are:

Hole diameter, 9⅞-inches, weight of hammer stem 800 pounds, stroke of hammer stem 15 inches, strokes per hour 12,000. The location of the well is in rock country, the strata estimated at 1000 to 1300 feet thick. The rock consists of soft lime rock, hard blue lime rock, lime rock with sand, flint strata, and flint boulders imbedded in lime rock. In this formation the Hammer Bit made a record of two feet in 14 minutes. After a six-hour run, the bit was pulled for inspection and it showed little wear, the edges being less than ⅛-inch thick. According to the manufacturers, records indicate that each sharp bit will make from 300 to 400 feet of hole without coming out of the hole.

Further information with more specific records on the bit may be had by inquiry to the United States Heat-Treating Company, 319 Dakota Street, San Antonio, Texas.

Catalog Announcement

Mine Safety Appliance Company, Pittsburgh, Pennsylvania, has recently issued a revised edition of Catalog No. 3, "Everything for Mine and Industrial Safety." The catalog consists of 135 pages profusely illustrated and shows a number of new industrial appliances including the Edison electric safety cap lamps, Models F and G. Copies may be had gratis upon application to the company.

Combination Wrench Set

J. H. WILLIAMS & COMPANY AND THE HUSKY WRENCH COMPANY

J. H. Williams & Company, Buffalo, New York, and the Husky Wrench Company, Milwaukee, Wisconsin, have effected a reciprocal sales arrangement which enables them to supply the trade with a combination wrench set. Each set is composed of Williams' "Superrenches" and "Husky" socket wrenches in popular sizes. The set is said to be the first to offer open-end and socket wrenches in standard assortments.

Further information regarding the set may be obtained from either company, by request.

Catalog Notice

"Pneumatic Tools and Accessories" is the title of a new catalog published by the Chicago Pneumatic Tool Company, New York. As its title suggests, the catalog covers a wide range of air-operated devices ranging from small drills to hoists capable of handling 10,000 pounds. Copies of the catalog may be secured by writing the company and asking for catalog No. 561.

CORRECTION NOTICE

Through an error in the advertisement of the A. M. Byers Company, which appeared in the April 6 issue of The Oil Weekly, the cuts were switched and used in the wrong place. The cut showing Byers galvanized pipe hammered flat, was used where the one showing steel pipe submitted to the same test should have been and vice versa.

Booklet Announcement

"Belt Dreessing Facts" is the title of a new booklet published by E. F. Houghton and Company, Philadelphia, Pennsylvania. The subject matter of the booklet is well written and contains much information on the proper care of belts.

Sub-heads are as follows: Belt Lubricant Essential; Liquid Lubricant is Best; Avoid Sticky Dressings; Slack Belts Undesirable; Loose Belts Waste Power; What a Dressing Should Do; Specially Adapted for the Purpose; Houghton Experience; Packages; Directions.

Copies of the booklet will be mailed to any one on request to the company.

Catalog Announcement

Alco Oil Tool Company, Compton, California, has released from the press a new Alco Oil Well Tools catalog. This booklet describes and illustrates the following products: Elliott Alco Core Drills; Also hard formation bits; Sharpe Super-Four Air Compressors; Alco flow beams and cages; Alco forged steel crosses; Alco Christmas tree hook-ups; and Alco gas engines.

All these products are used extensively in the industry both in California and elsewhere.

Copies of the booklet will be mailed on inquiry to the company.

J. B. Green, president of the Fusion Welding Corporation, Chicago, after making a 5000 mile lecture tour in this country, during which he spoke before several university conferences and meetings of national technical societies, left for a vacation in Mexico City. He was almost upon arrival pressed into service as a lecturer there and spoke on welding before a meeting arranged by the steel works "La Consolidada" which was attended by the managers of the railroads, tramways, pertoleum companies and related industries. Mr. Green reports a keen interest in metallic arc welding among Mexican metal making and using companies and a strong demand for Americans with a working knowledge of welding engineering.

The Regan Sales Company announces the removal of its Houston office to 1504 Magnolia Building, Dallas, on May 1. This change in location was made in order to be located more centrally as regards territory where Regan products are in demand, it was announced.

The Foxboro Company, Foxboro, Massachusetts, has established a branch office at 2104 Magnolia Building, Dallas, Texas, with J. B. McMahon as district manager. He will have as his associates R. L. Mallory and C. L. Bryan. All problems involving the use of controlling, recording and indicating instruments for flow, temperature, pressure and humidity, will be handled.

,,,If you Really Want to Reduce Costs,,,

here is

A Guaranteed Way to Do It

Let us look at this proposition fair and open-mindedly. Here is an improvement which in actual service of companies you know has outlasted three, five and up to thirty-six balls and seats. It has saved $500 a year for a single company whose name we will give on request; served three years in a well that once required change every month. No producer has yet ordered who did not re-order.

In addition to this, the No-Co-Ro Drop and Seat is covered by a definite and clearly worded guarantee—a 50% reduction in pulling costs or money back.

With such a saving guaranteed and a 70% to 90% saving possible, is it good business to delay a trial?

Order from Robinson or direct from Fort Worth warehouse.

NORRIS BROTHERS, Inc.

Robinson, Illinois Fort Worth, Texas

HYDRAULIC STOP COCK

—Unbreakable parts —No replacements

This is the "stop cock" that the oil field has long wanted. It has a longer life—requires no replacement of parts and can be kept in service longer than other types of plug valves. Ordinary valves or stop cocks seldom last thruout one installation—while in comparison and on actual service test BARSCO stop cocks have been put in use and reused on up to six well installation and are still in steady service at this writing.

Here are a few important BARSCO features:

(1)—Adapted for steam, water, gas, oil or air and *especially for Rotary Slush Pumps.*
(2)—Made in sizes of 1¼", 1½", 2", 2½", 3" and 4".
(3)—No grease to collect dirt, form scale and cause sticking.
(4)—Specially designed packing in both ends.
(5)—Fifteen (15) ton lift on core, 14" wrench, positive operation—no hammering.
(6)—One quarter turn of wrench to open and close.
(7)—Core (or plug) can't break or stick.
(8)—Made of special "BARSCO" steel—indestructible.
(9)—Pressure—2000 lbs., safety factor to meet all requirements.
(10)—Can be packed under pressure, open or closed.
(11)—Original installation only—no removal for upkeep.
(12)—First cost is your only cost. Unbreakable parts—no replacements.

Write for details and prices—today.

BARTLESVILLE SUPPLY CO. of Missouri

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Oklahoma Warehouse:
Tulsa—J. H. Kountz, 218 East Brady St.
Texas Warehouse:
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SQUEAKS FROM THE BULL WHEEL

Young lady (just operated on for appendicitis): "Oh, Doctor, will the scar show?"

Doctor: "Not if you're careful."

"Why are you running a steam roller over that field?" asked the stranger.

"I'm trying to raise mashed potatoes," explained the farmer.

It was about 2 a. m. "Wow-Wow-Wow-Wow!" yelled the baby.

"Four bawls and 1 walk," responded the ball player daddy, reaching for his slippers.

"I hear Harmony, the musician, was shot last night."

"What was the cause of the shooting?"

"Oh, he was playing in the wrong flat."

"Is the hemlock ready, Plato?" inquired Socrates.

"The warden says there is none in stock, master," replied Plato. "But the State has just received a shipment of stuff from America which they believe to be better and more efficacious."

"I'm all in the dark about how these bills are to be paid," said Mr. Hardup to his wife.

"Well, Henry," said she, as she pulled out one and laid it on the top of the pile, "you will be if you don't pay that one, for it's the electric bill."

"Now, tell me, what is the opposite of misery?"

"Happiness!" said the class in unison.

"And sadness?" she asked.

"Gladness."

"And the opposite of woe?"

"Giddap!" shouted the enthusiastic class.

The young druggist turned a morsel over in his mouth, tasting it skillfully. "'Smatter o' that cake, dearie?" he asked the lady who had recently consented to share his income. "Tastes kind of coaloily, doesn't it?"

"Oh, dear!" sobbed the bride, "I was afraid it wouldn't work but butter and lard and everything are so high I tried shortening with vaseline. We can get that at cost."

"Mandy, I'se a sick man," said Jake, looking very miserable. "At de horspittle dey says I'se got berkerlosis."

"All right, Jake, we'll take keer of you, and git rid of dat berkerlosis."

A week later Jake stumbled in, more woebegone than ever.

"'Tain't no use; Mandy, nary bit of use. I ain't never gwine git well. De doctors say dis morning I got two berkerlosis."

"What brand cigarettes do you smoke?"

"I dinna ken. I'm tae polite to ask."

"Is Claude still mopping floors at the hotel?"

"Yes, he's still the same old floor flusher."

Waiter: Were you expecting another lady, sir?

Guest: Is—sh-she a tall, stout woman with a fiery look in her eye?

"This check," declared the determined diner, to a friend who was making ineffectual feints at reaching for his wallet, "will be paid on a companionate basis."

Convict (surveying day's rations in cell) Two pieces of raisin bread with three raisins in them, every Thursday. In three years and five months I'll have enough to start a batch of home brew.

"Thought you said you had plowed the ten-acre field."

"No; I only said I was thinking about plowing it."

"Oh, I see, you merely turned it over in your mind."

"Nurse," said an amorous patient, "I'm in love with you. I don't want to get well."

"Cheer up, you won't she assured him. "The doctor's in love with me, too, and he saw you kiss me this morning."

A small boy in the visitors' gallery at the National Capital was watching the proceedings of the Senate chamber.

"Father, who is that gentleman?" He pointed to the chaplain.

"That, son, is the chaplain."

"Does he pray for the senators, father?"

"No, son; when he comes in he looks around, sees the senators, the few that may be sitting there, and then he prays for the country.

Mr. Guffy, the Florida realtor, died and went, surprisingly enough to heaven. There he was regaling a group of new acquaintances with a vivid tale of a sub-division he had sold for one million dollars. "And if I had held it six months longer I could have cleaned up double that sum," he declared with dramatic effect.

A bronzed individual rose, snorted and walked away.

"Who was that man?" demanded Mr. Guffy.

"That," he was informed, "was the Indian who sold Manhattan Island for twenty-four dollars."

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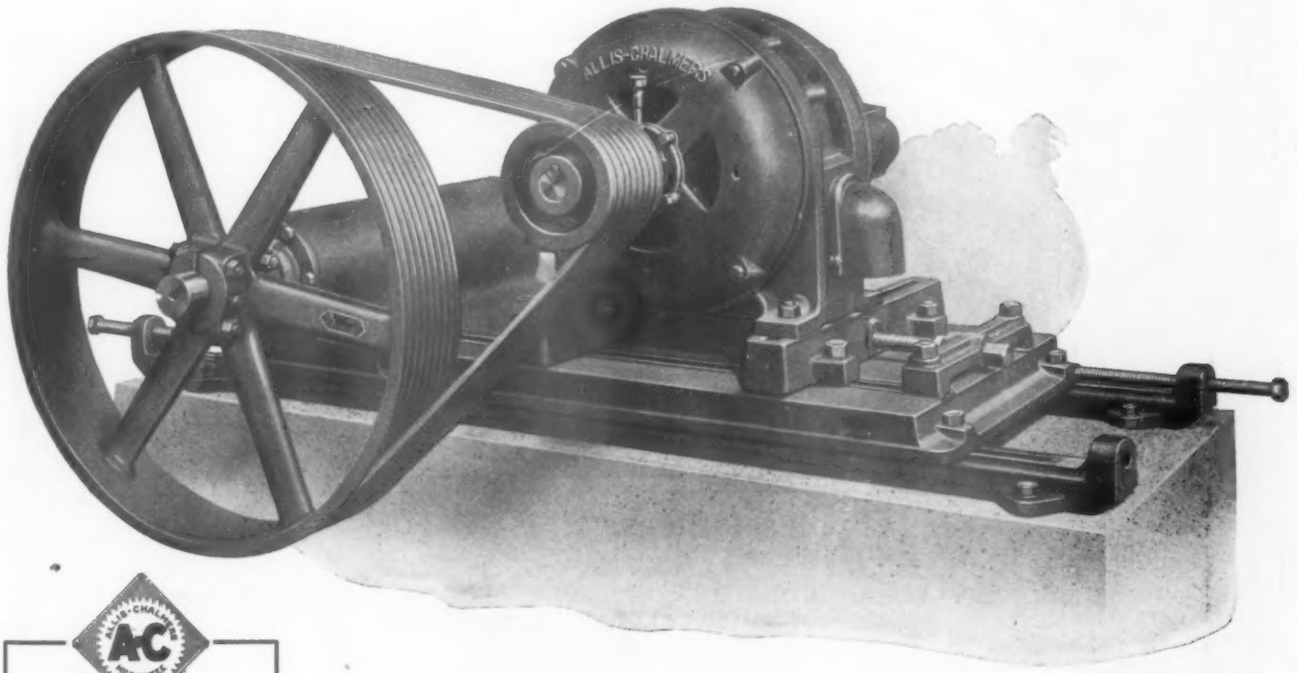

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